

Proposed

**APCD PERMIT TO OPERATE NO. 8036
AND
PART 70 OPERATING PERMIT NO. 8036**

**GREKA OIL AND GAS, INC.
SOUTH CAT CANYON STATIONARY SOURCE**

**INTERNAL COMBUSTION ENGINE FACILITY, CAT CANYON FIELD
6527 DOMINION ROAD
SANTA MARIA, CALIFORNIA 93454**

OPERATOR

GREKA OIL AND GAS, INC. (“GREKA”)

OWNERSHIP

GREKA OIL AND GAS, INC. (“GREKA”)

**SANTA BARBARA COUNTY
AIR POLLUTION CONTROL DISTRICT**

February 2010

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ABBREVIATIONS/ACRONYMS

AP-42	USEPA's <i>Compilation of Emission Factors</i>
APCD	Santa Barbara County Air Pollution Control District
API	American Petroleum Institute
ASTM	American Society for Testing Materials
BACT	Best Available Control Technology
bpd	barrels per day (1 barrel = 42 gallons)
CAM	compliance assurance monitoring
CEMS	continuous emissions monitoring
dscf	dry standard cubic foot
EU	emission unit
°F	degree Fahrenheit
gal	gallon
gr	grain
HAP	hazardous air pollutant (as defined by CAAA, Section 112(b))
H ₂ S	hydrogen sulfide
I&M	inspection & maintenance
k	kilo (thousand)
l	liter
lb	pound
lbs/day	pounds per day
lbs/hr	pounds per hour
LACT	Lease Automatic Custody Transfer
LPG	liquid petroleum gas
M	mega (million)
MACT	Maximum Achievable Control Technology
MM	million
MW	molecular weight
NEI	net emissions increase
NG	natural gas
NSPS	New Source Performance Standards
O ₂	oxygen
OCS	outer continental shelf
Ppm (vd or w)	parts per million (volume dry or weight)
psia	pounds per square inch absolute
psig	pounds per square inch gauge
PRD	pressure relief device
RACT	Reasonably Available Control Technology
ROC	reactive organic compounds, same as "VOC" as used in this permit
RVP	Reid vapor pressure
scf	standard cubic foot
scfd (or scfm)	standard cubic feet per day (or per minute)
SIP	State Implementation Plan
STP	standard temperature (60°F) and pressure (29.92 inches of mercury)
THC	Total hydrocarbons
tpy, TPY	tons per year
TVP	true vapor pressure
USEPA	United States Environmental Protection Agency
VE	visible emissions
VRS	vapor recovery system

1. Introduction

1.1 Purpose

1.1.2 General. The Santa Barbara County Air Pollution Control District (APCD) is responsible for implementing all applicable federal, state and local air pollution requirements that affect any stationary source of air pollution in Santa Barbara County. The federal requirements include regulations listed in the Code of Federal Regulations: 40 CFR Parts 50, 51, 52, 55, 61, 63, 68, 70 and 82. The State regulations may be found in the California Health & Safety Code, Division 26, Section 39000 et seq. The applicable local regulations can be found in the APCD's Rules and Regulations. This is a combined permitting action that covers both the Federal Part 70 permit (*Part 70 Operating Permit No. 8036*) as well as the State Operating Permit (*Permit to Operate No. 8036*).

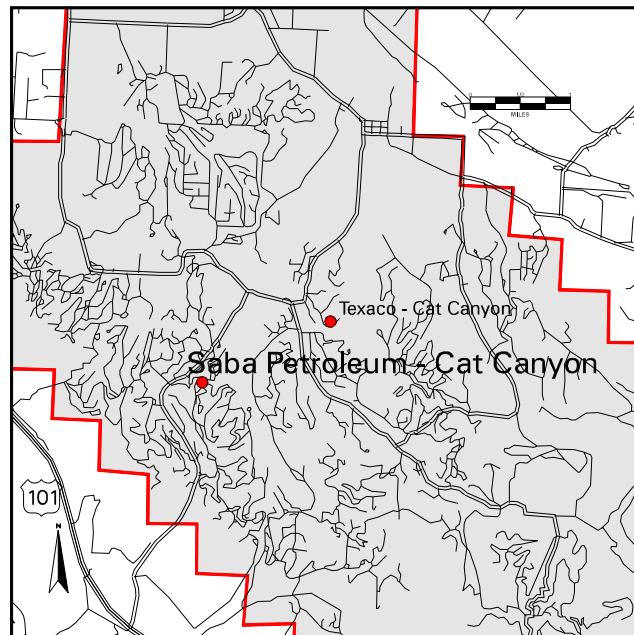
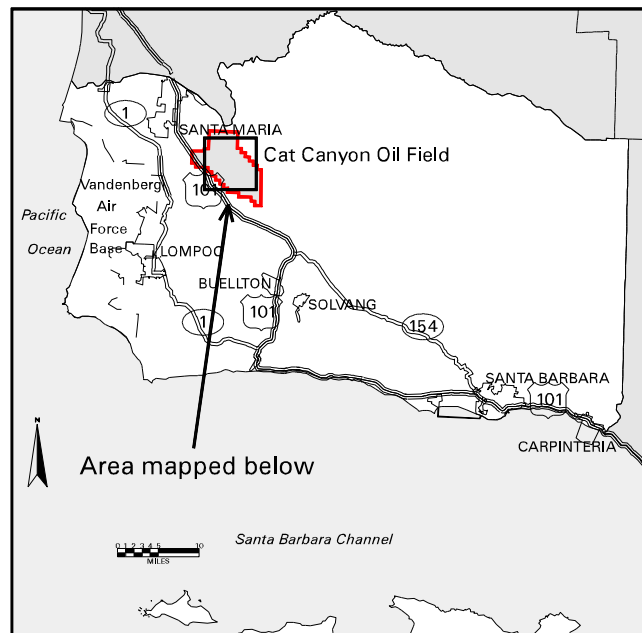
1.1.2 Part 70 Permitting. The initial Part 70 permit for the ICE Facility was issued November 1, 2000 in accordance with the requirements of the APCD's Part 70 operating permit program. This permit is the third renewal of the Part 70 permit, and may include additional applicable requirements. ICE Facility (FID 3831) is a part of the *Greka South Cat Canyon* stationary source (SSID = 2658), which is a major source for NO_x and CO. Conditions listed in this permit are based on federal, state or local rules and requirements. Sections 9.A, 9.B and 9.C of this permit are enforceable by the APCD, the USEPA and the public since these sections are federally enforceable under Part 70. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit, that part of the permit referred to is federally enforceable. Conditions listed in Section 9.D are "APCD-only" enforceable.

Pursuant to the stated aims of Title V of the CAAA of 1990 (i.e., the Part 70 operating permit program), this permit has been designed to meet two objectives. First, compliance with all conditions in this permit would ensure compliance with all federally-enforceable requirements for the facility. Next, the permit would be a comprehensive document to be used as a reference by the permittee, the regulatory agencies and the public to assess compliance.

1.2 Facility Overview

1.2.1 Facility Overview: Greka Oil and Gas, Inc. ("Greka") is the owner and operator of the Cat Canyon IC Engines Facility (termed hereafter as "IC Engines Facility"), and consists of multiple internal combustion engines operating on the leases within the Cat Canyon South Stationary Source. These leases are located in the Cat Canyon

Figure 1.1 Location Map for Greka Cat Canyon



Oil Field, approximately two miles south of the Palmer Road and Cat Canyon Road intersection and six miles south-southeast of the city of Santa Maria in Santa Barbara County. For APCD regulatory purposes, these leases are located in the Northern Zone of Santa Barbara County¹ as depicted in Figure 1.1. The IC Engines Facility was operational in September 1979 when its owner/operator Union Oil of California applied to the APCD for its first operating permit (ATC/PTO 4041). An operating permit was issued to Union Oil by the APCD in October 1979. In June, 1993 the ownership of the Cat Canyon stationary source including the IC Engines Facility was transferred from Unocal to Saba Petroleum Corporation doing business as D&S Industrial Services. In January 2000, Greka assumed ownership of the facility.

Stationary Source Overview: Prior to August 2002, the Greka Cat Canyon Stationary Source was a Part 70 source consisting of the Bell, Dominion, UCB, Blockman, Palmer-Stendl and an IC engines facility. In August 2002 Greka purchased nine leases within the Cat Canyon field from Vintage Petroleum which were incorporated into the existing Greka Pt70 Cat Canyon Stationary Source at that time. In November 2008 Greka, sold two of the leases within the stationary source; the California lease and United California lease. As a result of this sale, the stationary source configuration was reorganized based on the stationary source definition in APCD Rule 201. The single source was split into the following three sources: the North Cat Canyon Stationary Source consisting of the Goodwin, Harbordt, Lloyd, Mortenson, and Security/Thomas leases; the Central Cat Canyon Stationary Source consisting of the Porter lease and the South Cat Canyon Stationary Source consisting of the Bell, Blockman, Dominion, Palmer-Stendl, UCB and the IC Engines leases. Following this reorganization, only the South Cat Canyon Stationary Source (SSID = 2658) remained a Part 70 source.

Oil and gas well production at the Greka South Cat Canyon stationary source, is produced by wells at the Bell, Blockman, Dominion, Palmer-Stendl and UCB leases and is piped to the central processing facility at the Bell Lease. The crude oil processed at the Bell lease, is sent off-site via pipelines or tanker trucks. Gas production from these wells is processed at the Bell lease and used by the boilers and heater treaters at the Bell lease by the field combustion equipment throughout the Greka South Cat Canyon leases, or piped to locations offsite.

The IC engines at Greka South Cat Canyon stationary source comprise the prime mover force for the following systems:

- Oil & Gas Production wells (uncontrolled emissions engines)
- Power generation one controlled emissions engine)

Besides all crude oil well pumps, a number of gas compression and wastewater injection equipment at the Greka South Cat Canyon stationary source are powered by stationary, natural gas-fired IC engines. Operation of these IC engines and their emissions are addressed by the APCD in this permit. Any of these engines may be replaced by electric motors after notification to the APCD.

¹ APCD Rule 102, Definition: "Northern Zone"

- 1.2.2 Facility New Source Review Overview: Since July 1979 there have been five (5) NSR permit actions along with two (2) administrative permit actions. These were:

Change of Ownership 8036: On June 1, 1993, Saba Petroleum Corporation, doing business as D&S Industrial Services, applied to the APCD and obtained a change of ownership status for this lease and several other former Unocal properties.

PTO 9146: PTO 9146 issued on October 18, 1994 allowed lean-burn emission control on one Clark HRA-8 and two Clark HRA-4 IC engines operating at the Bell Lease Compressor Plant. The modification reduced NOx emissions but increased CO emissions from these engines. This permit is effectively superseded by ATC 9975 (see later this section).

ATC/PTO 9610: ATC 9610 was issued on December 20, 1996 authorizing Greka to install and operate four new rich burn, semi-portable, NSCR catalyst-equipped IC engines at various locations of the stationary source. PTO 9610 issued in 6/97 followed by PTO 9610-01 in 10/97 allowed the operation of three (3) of these engines. Two of these, namely a Waukesha 6RLZ (410 hp) and a Caterpillar G-342 NAHCR (225 hp) generated power to drive oil pumps and the third, a Waukesha F-1197G WAK powered an oil well pump.

PTO 8150: PTO 8150 was modified and re-issued in January, 1997 to reflect the operational changes in seven (7) IC engines. Effective July 1995, these engines were no longer required to provide emission reduction credits (ERC's) to Nuevo's Point Pedernales Project. Each of these engines are also derated, using orifice plates, to obtain exemptions from APCD Rule 333 emission standards.

ATC 9975/9975-01: Greka obtained ATC 9975 on October 12, 1998 (modified 3/7/2000) to install and operate a new, three-way catalyst-equipped compressor IC engine. This engine replaces an existing Clark HRA-8 main gas compressor engine (Reference APCD PTO 9146). The ATC also limits the operating hours for two Clark HRA-4 IC engines (Reference: APCD PTO 9146) and exempts these from the Rule 333 emission standards. An ERC (DOOI 0006) was created based on this ATC.

ATC 10133: Greka obtained ATC 10133 on May 19, 1999 to modify the ROC and CO emission limits imposed on three of its NSCR catalyst-equipped IC engines allowed to operate under PTO 9610-01.

Change of Ownership 8036-02: Greka obtained the ownership of the IC engine facility from Saba Petroleum. The APCD document TRN/OO 8036-02 was issued on 2/29/2000.

ATC/PTO 10919: This permit allowed Greka to operate the Waukesha 6LRZ internal combustion ("IC") engine at the Bell Lease Compressor plant (FID #03211). The engine replaced the previously installed Waukesha F3521GSI compressor engine unit. The Waukesha F3521GSI compressor engine unit will remain on permit should Greka decide to use this unit at a later date. This permit was cancelled due to the failure of the Waukesha 6LRZ and subsequent removal from the Cat Canyons stationary source. This permit was issued October 10, 2002.

ATC/PTO 11003: This permit allowed Greka to operate the Caterpillar G-342 internal combustion ("IC") engine at the Bell Lease Compressor plant (FID #03211). The engine replaced the previously installed Waukesha F3521GSI compressor engine unit. The Waukesha F3521GSI compressor engine unit will remain on permit should Greka decide to use this unit at a later date. This permit was issued May 12, 2003.

1.3 Emission Sources

Air pollution emissions from the IC engines are the result of fuel combustion. A minor fraction, consisting of ROC emissions, comes from piping components, such as valves and flanges. Section 4.0 of the permit provides the APCD's engineering analysis of these emission sources. Section 5.0 of the permit describes the allowable emissions from each permitted emissions unit and the IC engines and lists the potential emissions from non-permitted emission units.

A list of all permitted equipment is provided in Attachment 10.5.

1.4 Emission Control Overview

Of the 54 IC engines operating at the Cat Canyon stationary source, 53 engines at five leases either have nameplate ratings less than 50 bhp or have been derated through the use of orifice plates to less than 50 bhp. Consequently, these are not subject to the NO_x, CO or ROC emission standards of APCD Rule 333.

Air quality emission controls utilized on one IC engine as follows:

- Use of Non-Selective Catalytic Reduction (NSCR) control and Air/Fuel Ratio (AFR) controls to reduce NO_x, CO and ROC emissions.

Other controls include:

- Use of scrubber units to reduce the hydrogen sulfide content of the field gas to the NSCR-controlled IC engines to below 239 ppmvd (ATC's 9610 and 9975); also facilitates compliance with Rule 303 and 310.
- A Fugitive Hydrocarbon Inspection & Maintenance (I&M) program for detecting and repairing leaks of hydrocarbons from piping components at the compressor plant only, consistent with the requirements of Rule 331, to reduce ROC emissions by approximately 80 percent.

1.5 Offsets/Emission Reduction Credit Overview

Operation of equipment listed in this permit does not require emission offsets nor does it provide emission reduction credits (ERC). However, older equipment that was replaced by lower emitting equipment at Bell Lease facility's compressor plant provided ERCs, which must be maintained by ICE units permitted to operate at the Bell Lease compressor plant as described in Section 7.3 of this permit, DOI #006 and associated modifications to the DOI.

1.6 Part 70 Operating Permit Overview

- 1.6.1 Federally-enforceable Requirements: All federally enforceable requirements are listed in 40 CFR Part 70.2 (*Definitions*) under “applicable requirements.” These include all SIP-approved APCD Rules, all conditions in the APCD-issued Authority to Construct permits, and all conditions applicable to major sources under federally promulgated rules and regulations. All these requirements are enforceable by the public under CAAA. (*see Table 3.4-1 and Table 3.4-2 for a list of federally enforceable requirements*)
- 1.6.2 Insignificant Emissions Units: Insignificant emission units are defined under APCD Rule 1301 as any regulated air pollutant emitted from the unit, excluding HAPs, that are less than 2 tons per year based on the unit’s potential to emit and any HAP regulated under section 112(g) of the Clean Air Act that does not exceed 0.5 ton per year based on the unit’s potential to emit. Insignificant activities must be listed in the Part 70 application with supporting calculations. Applicable requirements may apply to insignificant units. See Section 5.5 for additional details.
- 1.6.3 Federal Potential to Emit: The federal potential to emit (PTE) of a stationary source does not include fugitive emissions of any pollutant, unless the source is: (1) subject to a federal NSPS/NESHAP requirement or (2) included in the 29-category source list specified in 40 CFR 51.166 or 52.21. The federal PTE does include all emissions from any insignificant emissions units. (*See Section 5.4 for the federal PTE for this source*)
- 1.6.4 Permit Shield: The operator of a major source may be granted a shield: (a) specifically stipulating any federally-enforceable conditions that are no longer applicable to the source and (b) stating the reasons for such non-applicability. The permit shield must be based on a request from the source and its detailed review by the APCD. Permit shields cannot be indiscriminately granted with respect to all federal requirements. Greka has not made a request for a permit shield.
- 1.6.5 Alternate Operating Scenarios: A major source may be permitted to operate under different operating scenarios, if appropriate descriptions of such scenarios are included in its Part 70 permit application and if such operations are allowed under federally-enforceable rules. Greka made no request for permitted alternative operating scenarios.
- 1.6.6 Compliance Certification: Part 70 permit holders must certify compliance with all applicable federally-enforceable requirements including permit conditions. Such certification must accompany each Part 70 permit application and be re-submitted annually on or before March 1st or on a more frequent schedule specified in the permit. Each certification is signed by a “responsible official” of the owner/operator company whose name and address is listed prominently in the Part 70 permit. (*see Section 1.6.9 below*)
- 1.6.7 Permit Reopening: Part 70 permits are re-opened and revised if the source becomes subject to a new rule or new permit conditions are necessary to ensure compliance with existing rules. The permits are also re-opened if they contain a material mistake or the emission limitations or other conditions are based on inaccurate permit application data.

1.6.8 Hazardous Air Pollutants (HAPs): Part 70 permits also regulate emission of HAPs from major sources through the imposition of maximum achievable control technology (MACT), where applicable. The federal PTE for HAP emissions from a source is computed to determine MACT or any other rule applicability. However, based on CAAA, Section 112 (n) (4) stipulations, HAP emissions from any equipment at this facility cannot be aggregated with HAP emissions from other units at the facility hence, HAPs, including any lease-wide emissions computations, are not addressed in this permit (*see Sections 0 and 5.5*).

1.6.9 Responsible Official: The designated responsible official and their mailing address is:

Ms. Susan Whalen, Vice-president
Greka Oil and Gas, Inc.
6527 Dominion Road
Santa Maria, California 93454

2. Process Description

2.1 Process Summary

Process Summary: A total of 53 piston type, *uncontrolled* IC engines located at the South Cat Canyon stationary source operate at the five associated leases to provide power to pumps and injectors. These are fired on gaseous fuel (field gas). All of these engines are rated (or de-rated) to operate below 50 BHP only.

A Caterpillar G-342 *controlled* IC engine (225 bhp), is equipped with Non-selective Catalytic Reduction ("NSCR") and fuel/air ratio control systems to reduce NO_x, ROC, and CO emissions from the engine exhaust. This engine is the main engine used at the Bell Lease Compressor Plant. The Caterpillar G-342 was confirmed to meet the emission reduction assumptions of DOI #23 in ATC/PTO 11003. This engine replaced a *controlled* Waukesha 747 hp, 6.44 MMBtu/hour input rated IC engine equipped with a DeNO_x 3-way catalytic converter plus an AFR control unit permitted under ATC 9975.

Complete descriptions of the non-IC engine operating processes at Greka South Cat Canyon stationary source are provided in the other Cat Canyon facility Part 70 permits.

2.2 Support Systems

A 500 gallon tank for liquefied propane is located at the Compressor Plant to service Plant vehicles. These vehicles provide transportation or other services.

2.3 Detailed Process Equipment Listing

Refer to the table in Attachment 10.5 for a complete listing of all permitted emission units.

3. Regulatory Review

This Section identifies the federal, state and local rules and regulations applicable to the IC Engines Facility.

3.1 Rule Exemptions Claimed

- APCD Rule 202 (Exemptions to Rule 201): Greka has not requested any exemption under this rule (note that an exemption from permit does not grant relief from any applicable prohibitory rule unless specifically exempted by that prohibitory rule).
- APCD Rule 333 (Control of Emissions from Reciprocating Internal Combustion Engines): Fifty-three of the fifty-four IC engines subject to this permit either have nameplate ratings less than 50 bhp or have been derated, through the use of orifice plates, to less than 50 bhp. Therefore, these engines are currently exempt from Rule 333 provisions.

3.2 Compliance with Applicable Federal Rules and Regulations

- 3.2.1 40 CFR Parts 51/52 [New Source Review (Nonattainment Area Review and Prevention of Significant Deterioration)]: The IC Engines Facility was constructed and permitted prior to the applicability of these regulations. However, all permit modifications as of July, 1979 are subject to APCD NSR requirements. Compliance with APCD Regulation VIII (*New Source Review*), ensures that future modifications to the facility will comply with these regulations.
- 3.2.2 40 CFR Part 60 [New Source Performance Standards]: None of the equipment in this permit is subject to NSPS.
- 3.2.3 40 CFR Part 61 [NESHAP]: None of the equipment in this permit is subject to NESHAP.
- 3.2.4 40 CFR Part 63 [MACT]: This facility is not currently subject to the provisions of this Subpart. On June 17, 1999, EPA promulgated Subpart HH, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Oil and Natural Gas Production and Natural Gas Transmission and Storage. Pursuant to this promulgation, Greka submitted information in June 2000 and supporting information in July 2000 indicating that the Bell, Blockman, Dominion, Palmer-Stendl, and UCB leases were exempt from the requirements of this MACT based on its black oil production. The MACT exemption holds for the South Cat Canyon stationary source, since black oil is produced at each of the leases comprising the source. The Greka South Cat Canyon stationary source is subject to general recordkeeping requirements as defined in condition 9.B.12.
- 3.2.5 40 CFR Part 64 [Compliance Assurance Monitoring]: This rule became effective on April 22, 1998 and affects emission units at the source subject to a federally enforceable emission limit or standard that use a control device to comply with the emission standard, and either pre-control or post-control emissions exceed the Part 70 source emission thresholds (currently 100 TPY for any pollutant). Compliance with this rule was evaluated and it was determined that no emission units at this facility are currently subject to CAM.
- 3.2.6 40 CFR Part 70 [Operating Permits]: This Subpart is applicable to IC Engines Facility. Table 3.1 lists the federally enforceable APCD promulgated rules that are “generic” and apply to IC Engines Facility. Table 3.2 lists the federally enforceable APCD promulgated rules that are “unit-specific”. These tables are based on data available from the APCD’s administrative files and from Greka’s Part 70 Operating Permit renewal application submitted July 2009. Table 3.4-4 includes the adoption dates of these rules.

In its Part 70 renewal permit application submitted in July 2009 Greka certified compliance with all existing APCD rules and permit conditions. This certification is also required of Greka semi-annually. Issuance of this permit and compliance with all its terms and conditions will ensure that Greka complies with the provisions of all applicable Subparts.

3.3 Compliance with Applicable State Rules and Regulations

- 3.3.1 Division 26. Air Resources [California Health & Safety Code]: The administrative provisions of the Health & Safety Code apply to this facility and will be enforced by the APCD. These provisions are APCD-enforceable only.

- 3.3.2 California Administrative Code Title 17: These sections specify the standards by which abrasive blasting activities are governed throughout the State. All abrasive blasting activities at ICE Facility are required to conform to these standards. Compliance will be assessed through onsite inspections. These standards are APCD-enforceable only. However, CAC Title 17 does not preempt enforcement of any SIP-approved rule that may be applicable to abrasive blasting activities.

3.4 Compliance with Applicable Local Rules and Regulations

- 3.4.1 Applicability Tables: In addition to Table 3.4-1 and Table 3.4-2, Table 3.4-3 lists the non-federally enforceable APCD promulgated rules that apply to the ICE facility. Table 3.4-4 lists the adoption date of all rules applicable to this permit at the date of this permit's issuance.
- 3.4.2 Rules Requiring Further Discussion: This section provides a more detailed discussion regarding the applicability and compliance of certain rules.

The following is a rule-by-rule evaluation of compliance for the ICE Facility:

Rule 301 - Circumvention: This rule prohibits the concealment of any activity that would otherwise constitute a violation of Division 26 (Air Resources) of the California H&SC and the SBCAPCD rules and regulations. To the best of the District's knowledge, Greka is operating in compliance with this rule.

Rule 302 - Visible Emissions: This rule prohibits the discharge from any single source any air contaminants for which a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade than a reading of 1 on the Ringelmann Chart or of such opacity to obscure an observer's view to a degree equal to or greater than a reading of 1 on the Ringelmann Chart. Emission units subject to this rule include the internal combustion engines within the Greka South Cat Canyon stationary source. Compliance will be assured by requiring all combustion equipment to be maintained according to manufacturer maintenance schedules and to the ICE Engine I&M Plan .

Rule 303 - Nuisance: This rule prohibits Greka from causing a public nuisance due to the discharge of air contaminants. Based on the lease's location, the potential for public nuisance is small.

Rule 304 - Particulate Matter, Northern Zone: The Greka South Cat Canyon stationary source is considered a Northern Zone source. This rule prohibits the discharge into the atmosphere from any source particulate matter in excess of 0.3 gr/scf. Emission units subject to this rule include the internal combustion engines. It is highly improbable that the gas-fired engines will exceed the particulate emission standards listed in Rule 304.

Rule 309 - Specific Contaminants: Under Section "A", no source may discharge sulfur compounds and combustion contaminants in excess of 0.2 percent as SO₂ (by volume) and 0.3 gr/scf (at 12% CO₂) respectively. Sulfur emissions due to combustion of field gas containing no more than 796 ppmv H₂S will comply with the SO₂ limit. All combustion

equipment items have the potential to exceed the combustion contaminant limit if not properly maintained (see discussion on Rule 304 above for compliance).

Rule 310 - Odorous Organic Compounds: This rule prohibits the discharge of H₂S and organic sulfides that result in a ground level impact beyond the property boundary in excess of either 0.06 ppmv averaged over 3 minutes or 0.03 ppmv averaged over 1 hour. No measured data exists to confirm compliance with this rule, however, all produced gas used by the ICE facility is sweet. As a result, it is expected that compliance with this rule will be achieved.

Rule 311 - Sulfur Content of Fuels: This rule limits the sulfur content of fuels combusted by the ICE Facility to 50 gr/100 scf (calculated as H₂S) {or 796 ppmvd}. {Note: A more stringent limit {239 ppmvd} is in effect for gaseous fuel used by the *controlled* IC engines and IC engines operated at the Bell Lease compressor plant}. All IC engines within the Greka South Cat Canyon stationary source fire on sweet gas (less than 6 ppmvd) at this time, thus they are expected to be in compliance with the gaseous fuel limit as determined by fuel (field gas) analysis documentation. The *Fuel Gas Sulfur and HHV Monitoring Plan* identifies sampling locations and procedures for combustion units permitted on the Greka South Cat Canyon stationary source.

Rule 322 - Metal Surface Coating Thinner and Reducer: This rule prohibits the use of photochemically reactive solvents for use as thinners or reducers in metal surface coatings. Greka is required to maintain records during maintenance operations to ensure compliance with this rule.

Rule 323 - Architectural Coatings: This rule sets standards for the application of surface coatings. The primary coating standard that will apply to the facility is for Industrial Maintenance Coatings which has a limit of 340 gram ROC per liter of coating, as applied. Greka is required to comply with the Administrative requirements under Section F for each container on the facility.

Rule 324 - Disposal and Evaporation of Solvents: This rule prohibits any source from disposing more than one and a half gallons of any photochemically reactive solvent per day by means that will allow the evaporation of the solvent into the atmosphere. Greka is required to maintain records to ensure compliance with this rule.

Rule 330 - Surface Coating of Metal Parts and Products: This rule sets standards for many types of coatings applied to metal parts and products. In addition to the ROC standards, this rule sets operating standards for application of the coatings, labeling and record-keeping.

Rule 331 - Fugitive Emissions Inspection and Maintenance: This rule applies to components in liquid and gaseous hydrocarbon service at oil and gas production fields. Ongoing compliance with the provisions of this rule will be assessed via the APCD-approved Fugitive I&M Plan (April 2004), facility inspection by APCD personnel using an organic vapor analyzer and through review of operator records.

Rule 333 - Control of Emissions from Reciprocating Internal Combustion Engines: This rule applies to all engines with a rated brake horsepower of 50 or greater that are fueled by liquid or gaseous fuels. The Caterpillar G-342 NAHCR engine, operated in a non-cyclic rich-burn mode, is the only engine subject to the provisions of Section D.1 (NO_x, ROC and CO emission limits of 50, 250 and 4500 ppmvd at 15 percent O₂).

Rule 333 was revised 6/19/2008, however the applicable emission limits for this ICE did not change. The only new requirement was the submittal of an ICE Inspection and Maintenance Plan. This plan was submitted and approved by the APCD in November 2009.

Due to NSR permit conditions, this engine is restricted to emission limits that are much more stringent than the provisions of Section D.1 of Rule 333 (revised 6/19/2008). See Section 9.C.1, Table 1.1 for a summary of these emission limits.

Rule 353 - Adhesives and Sealants: This rule applies to the use of adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers or any other primers. Compliance with this rule is met through appropriate record keeping of adhesive and sealant materials used. Also, exclusive use of adhesive and sealant contained in containers of 16 fluid ounces or less demonstrate compliance with this rule.

Rule 505 - Breakdown Conditions: This rule describes the procedures that Greka must follow when a breakdown condition occurs to any emissions unit associated with ICE Facility.

A breakdown condition is defined as an unforeseeable failure or malfunction of (1) any air pollution control equipment or related operating equipment which causes a violation of an emission limitation or restriction prescribed in the District Rules and Regulations, or by State law, or (2) any in-stack continuous monitoring equipment, provided such failure or malfunction:

- a. Is not the result of neglect or disregard of any air pollution control law or rule or regulation;
- b. Is not the result of an intentional or negligent act or omission on the part of the owner or operator;
- c. Is not the result of improper maintenance;
- d. Does not constitute a nuisance as defined in Section 41700 of the Health and Safety Code;
- e. Is not a recurrent breakdown of the same equipment.

Rule 603 - Emergency Episode Plans: Section "A" of this rule requires the submittal of *Stationary Source Curtailment Plan* for all stationary sources that can be expected to emit more than 100 tons per year of hydrocarbons, nitrogen oxides, carbon monoxide or particulate matter. A revised plan was submitted and approved by the APCD in April 2004.

Table 3.4-1 Generic Federally-Enforceable APCD Rules

Generic Requirements	Affected Emission Units	Basis for Applicability
<u>RULE 101</u> : Compliance by Existing Installations	All emission units	Emission of pollutants
<u>RULE 102</u> : Definitions	All emission units	Emission of pollutants
<u>RULE 103</u> : Severability	All emission units	Emission of pollutants
<u>RULE 201</u> : Permits Required	All emission units	Emission of pollutants
<u>RULE 202</u> : Exemptions to Rule 201	Applicable emission units, as listed in form 1302-H of the Part 70 application	Insignificant activities/emissions, per size/rating/function
<u>RULE 203</u> : Transfer	All emission units	Change of ownership
<u>RULE 204</u> : Applications	All emission units	Addition of new equipment of modification to existing equipment.
<u>RULE 205</u> : Standards for Granting Permits	All emission units	Emission of pollutants
<u>RULE 206</u> : Conditional Approval of Authority to Construct or Permit to Operate	All emission units	Applicability of relevant Rules
<u>RULE 207</u> : Denial of Applications	All emission units	Applicability of relevant Rules
<u>RULE 208</u> : Action on Applications – Time Limits	All emission units. Not applicable to Part 70 permit applications.	Addition of new equipment or modification to existing equipment.
<u>RULE 212</u> : Emission Statements	All emission units	Administrative
<u>RULE 301</u> : Circumvention	All emission units	Any pollutant emission
<u>RULE 302</u> : Visible Emissions	All emission units	Particulate matter emissions
<u>RULE 303</u> : Nuisance	All emission units	Emissions that can injure, damage or offend.
<u>RULE 304</u> : PM Concentration – North Zone	Each PM source	Emission of PM in effluent gas
<u>RULE 309</u> : Specific Contaminants	All emission units	Combustion contaminants
<u>RULE 311</u> : Sulfur Content of Fuel	All combustion units	Use of fuel containing sulfur
<u>RULE 322</u> : Metal Surface Coating Thinner and Reducer	Emission units using solvents	Solvent used in process operations.

Generic Requirements	Affected Emission Units	Basis for Applicability
<u>RULE 323</u> : Architectural Coatings	Paints used in maintenance and surface coating activities	Application of architectural coatings.
<u>RULE 324</u> : Disposal and Evaporation of Solvents	Emission units using solvents	Solvent used in process operations.
<u>RULE 330</u> : Surface Coating of Metal Parts	Emission units using metal parts coating	Surface coating used in maintenance operations.
<u>RULE 353</u> : Adhesives and Sealants	Emission units using adhesives and sealants	Adhesives and sealants used in process operations.
<u>RULE 505.A, B1, D</u> : Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded.
<u>RULE 603</u> : Emergency Episode Plans	Stationary sources with PTE greater than 100 tpy	Greka – Cat Canyon is a major source.
<u>REGULATION VIII</u> : New Source Review	All emission units	Addition of new equipment or modification to existing equipment. Applications to generate ERC Certificates.
<u>REGULATION XIII (RULES 1301-1305)</u> : Part 70 Operating Permits	All emission units	Greka – Cat Canyon is a major source.

Table 3.4-2 Unit-Specific Federally-Enforceable APCD Rules

Unit-Specific Requirements	Affected Emission Units	Basis for Applicability
<u>RULE 331</u> : Fugitive Emissions Inspection & Maintenance	All components (valves, flanges, seals, compressors and pumps) used to handle oil and gas	Components emit fugitive ROCs.
<u>RULE 333</u> : Control of Emissions from Reciprocating Internal Combustion Engines	Waukesha F-1197 & Caterpillar G-342	All ICE's with bhp greater than 50 hp

Table 3.4-3 Non-Federally-Enforceable APCD Rules

Requirement	Affected Emission Units	Basis for Applicability
<u>RULE 210</u> : Fees	All emission units	Administrative
<u>RULE 310</u> : Odorous Org. Sulfides	All emission units	Emission of organic sulfides
<u>RULES 501-504</u> : Variance Rules	All emission units	Administrative

Requirement	Affected Emission Units	Basis for Applicability
<u>RULE 505.B2, B3, C, E, F, G:</u> Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded or rule requirements are not complied with.
<u>RULES 506-519:</u> Variance Rules	All emission units	Administrative

Table 3.4-4 Adoption Dates of APCD Rules Applicable at Issuance of Permit

Rule No.	Rule Name	Adoption Date
Rule 101	Compliance by Existing Installations: Conflicts	June 1981
Rule 102	Definitions	April 17, 1997
Rule 103	Severability	October 23, 1978
Rule 201	Permits Required	April 17, 1997
Rule 202	Exemptions to Rule 201	April 17, 1997
Rule 203	Transfer	April 17, 1997
Rule 204	Applications	April 17, 1997
Rule 205	Standards for Granting Permits	April 17, 1997
Rule 206	Conditional Approval of ATC or PTO	October 15, 1991
Rule 208	Action on Applications - Time Limits	April 17, 1997
Rule 212	Emission Statements	October 20, 1992
Rule 301	Circumvention	October 23, 1978
Rule 302	Visible Emissions	June 1981
Rule 303	Nuisance	October 23, 1978
Rule 304	Particulate Matter Concentration - Northern Zone	October 23, 1978
Rule 309	Specific Contaminants	October 23, 1978
Rule 310	Odorous Organic Sulfides	October 23, 1978
Rule 311	Sulfur Content of Fuels	October 23, 1978
Rule 317	Organic Solvents	October 23, 1978
Rule 321	Solvent Cleaning Operations	September 18, 1997
Rule 322	Metal Surface Coating Thinner and Reducer	October 23, 1978

Rule No.	Rule Name	Adoption Date
Rule 323	Architectural Coatings	July 18, 1996
Rule 324	Disposal and Evaporation of Solvents	October 23, 1978
Rule 331	Fugitive Emissions Inspection and Maintenance	December 10, 1991
Rule 333	Control of Emissions from Reciprocating Internal Combustion Engines	April 17, 1997
Rule 353	Adhesives and Sealants	August 19, 1999
Rule 360	Emissions from Oxides of Nitrogen from Large Water Heaters and Small Boilers	October 17, 2002
Rule 361	Small Boilers, Steam Generators and Process Heaters	January 17, 2008
Rule 505	Breakdown Conditions (Section A, B1 and D)	October 23, 1978
Rule 603	Emergency Episode Plans	June 15, 1981
Rule 801	New Source Review	April 17, 1997
Rule 802	Nonattainment Review	April 17, 1997
Rule 803	Prevention of Significant Deterioration	April 17, 1997
Rule 804	Emission Offsets	April 17, 1997
Rule 805	Air Quality Impact and Modeling	April 17, 1997
Rule 806	Emission Reduction Credits	April 17, 1997
Rule 901	New Source Performance Standards (NSPS)	May 16, 1996
Rule 1001	National Emission Standards for Hazardous Air Pollutants (NESHAPS)	October 23, 1993
Rule 1301	General Information	September 18, 1997
Rule 1302	Permit Application	November 9, 1993
Rule 1303	Permits	November 9, 1993
Rule 1304	Issuance, Renewal, Modification and Reopening	November 9, 1993
Rule 1305	Enforcement	November 9, 1993

3.5 Compliance History

This section contains a summary of the compliance history for this facility and was obtained from documentation contained in the APCD's Administrative file.

3.5.1 *Facility Inspections.* Since the prior permit renewal, facility inspections were conducted on September 27, 2007, February 26, 2009 and August 26, 2009. Each report indicates that the facility was operating in compliance with APCD rules and the conditions of this permit at the time of the inspections.

3.5.2 The following enforcement actions were issued to this lease since the previous permit renewal:

NOV 8584: Violation of PTO 8036. Issued 6/21/2006. Failure to provide records required by CVR.

NOV 9114: Violation of Rule 333. Issued 3/4/2009. Failure to submit Rule 333 compliance plan.

3.5.3 Significant Historical Hearing Board Actions: There have been no significant historical Hearing Board actions issued since the prior permit renewal.

4. Engineering Analysis

4.1 General

The engineering analyses performed for this permit were limited to the review of:

- ☞ emission factors and calculation methods for each emissions unit
- ☞ emission control equipment (including RACT, BACT, NSPS, NESHAP, MACT)
- ☞ emission source testing, sampling, CEMS, CAM
- ☞ process monitors needed to ensure compliance

Unless noted otherwise, default ROC/THC reactivity profiles from the APCD's document titled "VOC/ROC Emission Factors and Reactivities for Common Source Types" dated 7/13/98 (ver. 1.1) was used to determine non-methane, non-ethane fraction of THC.

4.2 Stationary Combustion Sources

This IC engine facility consists of gas-fired piston internal combustion engines which have been categorized into the following groups for determining emissions:

- 4.2.1 *Permitted IC Engines at the leases, not subject to emission controls.* This category includes 53 piston-type internal combustion engines which are fired on gaseous fuel (field gas) and provide power to pumps, compressors and other equipment. Table 5.2-1, and 10.2-1 of this permit contains a listing of these engines, the engine specifications, the operating limitations, and the properties of the fuel burned in the engines. All of these engines either have nameplate ratings less than 50 bhp or have been de-rated to less than 50 bhp through the use of orifice plates.

$$ER = [(EF \times BHP \times BSCF \times LCF \times HPP) \div 10^6]$$

Where:

ER =	emission rate (lb/period)
EF =	pollutant specific emission factor (lb/MMBtu)
BHP =	engine rated max brake-horsepower (bhp)
BSFC =	engine brake specific fuel consumption (Btu/bhp-hr)
LCF =	fuel correction factor, LHV to HHV
HPP =	operating hours per time period (hrs/period)

The emission factor is an energy based value using the higher heating value (HHV) of the fuel. As such, an energy based BSFC value must also be based on the HHV. Manufacturer BSFC data are typically based on the lower heating value (LHV) data and thus require a conversion (LCF) to the HHV basis. The LCF value is about 1.10. Volume or mass based BSFC data do not need any conversions.

Listed below are the emission factors "EF" used specifically for these IC engines. The references providing the basis for these factors are also listed:

NO _x	= 1.905 lb/MMBtu ^(a)
ROC	= 0.105 ^(a, f)
CO	= 1.60 ^(d)
SO _x	= 0.169 * (S) / HHV ^(b, e)
PM	= 0.01 ^(c)
PM ₁₀	= 0.01 ^(c, g)

Where:

- (a) APCD Hearing Board Action specified factors for gaseous-fired engines, May 2, 1990.
- (b) Mass balance; S (*Re: APCD-70, Section E.2*) = total Sulfur in ppmv = 796 ppmvd
- (c) NEDs factor, (8/88)
- (d) AP-42, Section 3.2, Tables 3.2-1 and 3.2-4 (Dated 10/92)
- (e) HHV = fuel high heating value = 1100 Btu/scf
- (f) Non-methane, non-ethane ROC/THC mass fraction per 04/02/97 APCD memorandum.
- (g) PM₁₀/TSP mass ratio assumed to be 1.00.

The BSFC is unique for each make/model engine. The BSFC numbers are based on values used in past reevaluations of this permit.

- 4.2.2 *Permitted IC Engine at the Bell Lease Compressor Plant - NSCR-controlled Caterpillar G-342 Engine (#6466).* The Caterpillar G-342 is a rich-burn, semi-portable, internal combustion engine ("ICE") at the Bell Lease Compressor Plant. This ICE was previously permitted under ATC/PTO 9610 to power various types of oil production equipment. It is equipped with Non-selective Catalytic Reduction ("NSCR"), and fuel/air ratio control systems to reduce the exhaust NO_x, ROC, and CO emissions described in Table 4.2-1. The emissions from this engine are subject, at a minimum, to the emission limitations of APCD Rule 333, §D.1, and the NO_x, ROC, and CO limitations of the Waukesha F3521GSI unit per ATC/PTO 11003. The NO_x emission factor has been reduced to 0.135 lb/MMBtu and the CO emission factor has been reduced to 0.674 lb/MMBtu, per Table 4.2-2. These emission factors correspond to 36 ppmv NO_x corrected to 15% O₂ and 299 ppmv CO corrected to 15% O₂. The SO_x emission factor is based on a maximum sulfur content of 239 ppmv for fuel gas.

Table 4.2-1 Bell Lease Compressor Plant IC Engine Emission Controls

IC Engine #	NSCR Catalyst ² Make & Model & Rating	Fuel /Air Ratio Controller ³ Make & Model
# 6466: Caterpillar G-342 225 bhp @ 1,300 RPM	Johnson-Matthey; Model MX-20; Rated to 866 ACFM	Blackhawk Services: Model # BH-201 or Altronic Model # APC-100

As before, the emissions calculation methodology is the same for this IC engine, namely:

$$ER = [(EF \times BHP \times BSFC \times LCF \times HPP) \div 10^6]$$

Where:

ER	= emission rate (lb./period)
EF	= pollutant specific emission factor (lb/MMBtu)
BHP	= engine rated max brake-horsepower (bhp)
BSFC	= engine brake specific fuel consumption (Btu/bhp-hr)
LCF	= fuel correction factor, LHV to HHV = 1.10
HPP	= operating hours per time period (hrs/period)

² NSCR Catalysts: The NSCR is operated with the engine exhaust entering unit at fuel-rich to stoichiometric air/fuel ratios (i.e., oxygen content @ 0.70 to 0.20 %) as maintained by the fuel/air ratio controller.

³ Fuel/Air Ratio Controllers: Each adjusts the engine's fuel pressure regulator based upon the conditioned signal (i.e., millivolts) received from an exhaust oxygen sensor mounted in the inlet of the NSCR catalyst.

The controlled emission factors "EF" for the Caterpillar G-342 engine is listed in Table 4.2-4:

Table 4.2-2 Bell Lease Compressor Plant IC Engine Emission Factors

APCD Device No.	IC Engine	NO _x	ROC	CO	SO ₂	PM ₁₀
	Description	lb/MMBtu	lb/MMBtu	lb/MMBtu	lb/MMBtu	lb/MMBtu
6466	Caterpillar G-342	0.135	0.080	0.674	0.037	0.009

In order to ensure that the catalyst is effectively operating at all times, the use of an air/fuel ratio controller is required. The BSFC is unique to each engine and is listed in Table 5.2-2. [Re: APCD ATC/PTO 9610]

4.3 Fugitive Hydrocarbon Sources

Emissions of reactive organic compounds from piping components (e.g., valves and connections), and pressure relief/vacuum valves at the Bell Lease gas compressor plant only have been quantified using emission factors pursuant to APCD P&P 6100.061 (*Determination of Fugitive Hydrocarbon Emissions at Oil and Gas Facilities Through the Use of Facility Component Counts - Modified for Revised ROC Definition*).

The component leak-path (clp) was counted consistent with P&P 6100.061. This leak-path count is not the same as the "component" count required by APCD Rule 331. Both gas/light liquid and oil side components are in service at this facility.

The component leak path counts are based on information presented in Greka's September 18, 1998 submittal. The calculation methodology for the fugitive emissions is:

$$ER = [(EF \times CLP \div 24) \times (1 - CE) \times (HPP)]$$

Where:

- ER = emission rate (lb/period)
- EF = ROC emission factor (lb/clp-day)
- CLP = component leak-path (clp)
- CE = control efficiency
- HPP = operating hours per time period (hrs/period)

An emission control efficiency of 80 percent is credited to components subject to the Rule 331 LDAR requirements. Ongoing compliance is determined in the field by inspection with an organic vapor analyzer and verification of operator records.

Detailed emission calculations for fugitive emissions are shown in Attachments 10.1 and 10.2.

4.4 Other Emission Sources

The following is a brief discussion of other emission sources at the ICE Facility:

- 4.4.1 *Surface Coating:* Surface coating operations involving the use of paints, coatings and thinners typically include normal touch up activities. Also, entire facility painting programs are performed once every few years. Emissions are determined based on mass balance calculations assuming all solvents evaporate into the atmosphere. Emission of PM/PM₁₀ from paint over spray are not calculated due to the lack of established calculation techniques.
- 4.4.2 *Abrasive Blasting:* Abrasive blasting with CARB certified sands may be performed as a preparation step prior to surface coating. Particulate matter is emitted during this process. A general emission factor of 0.01 pound PM per pound of abrasive is used (SCAQMD - Permit Processing Manual, 1989) to estimate emissions of PM and PM₁₀ when needed for compliance evaluations. A PM/PM₁₀ ratio of 1.0 is assumed.

4.5 BACT/NSPS/NESHAP/MACT

- 4.5.1 *Permitted IC engines at the leases, not subject to emissions control.* The IC engines listed in this permit are not subject to any best available control technology (BACT), NSPS or NESHAP provisions.
- 4.5.2 *Permitted IC engines at Bell Lease Compressor Plant.* The use of NSCR controls on the Caterpillar G-342 engine at the Bell Lease Compressor Plant, if operated consistent with the requirements of this permit, reduces NO_x, ROC, or CO emissions enough to preclude any BACT analysis. The specified NSCR equipment and emission limits herein, however, meet accepted BACT standards for this type and class of equipment in effect to date. This engine does not trigger federal NSPS or NESHAP review.
[Re: APCD ATC/PTO 9610]
- 4.5.3 *MACT - Subpart HH.* On June 17, 1999, EPA promulgated Subpart HH, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Oil and Natural Gas Production and Natural Gas Transmission and Storage. Greka submitted information in June 2000 and supporting information in July 2000 indicating the Cat Canyon source was exempt from the requirements of this MACT based on 'black oil' production. The Greka South Cat Canyon source, which includes this facility, is still exempt from the requirements of this MACT.

4.6 CEMS/Process Monitoring/CAM

4.6.1 *CEMS*: There are no continuous emission monitors (CEMS) operating at this facility.

4.6.2 *Process Monitoring*: In many instances, ongoing compliance beyond a single (snap shot) source test is assessed by the use of process monitoring systems. Examples of these monitors include: engine hour meters, fuel usage meters, water injection mass flow meters and hydrogen sulfide analyzers. Once these process monitors are in place, it is important that they be well maintained and calibrated to ensure that the required accuracy and precision of the devices are within specifications. At a minimum, the following process monitors will be required to be calibrated and maintained in good working order:

- Hour meters (totalizing, non-resettable for each of the two 'controlled emissions' IC engines)
- Fuel flow meters (dedicated to each of the two 'controlled emissions' IC engine)
- Electronic Air/Fuel Ratio Controller (for the two 'controlled emissions' IC engines)

To implement the above calibration and maintenance requirements the APCD-approved *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan* (April 2004) Greka addresses manufacturer recommended maintenance and calibration schedules. The plan specifically identifies the acceptable operational set points for the A/F ratio controller which shows the engines' emissions to be in compliance. Where manufacturer guidance is not available, the recommendations of manufacturers of comparable equipment, and good engineering judgment is utilized.

4.6.3 *CAM*: Greka South Cat Canyon is a major source that is subject to the USEPA's Compliance Assurance Monitoring (CAM) rule (40 CFR 64). Any emissions unit with uncontrolled emissions potential exceeding major source emission thresholds for any pollutant is subject to CAM provisions. Compliance with this rule was evaluated and it was determined that no emission units at this facility are currently subject to CAM.

4.7 Source Testing/Sampling

Source testing and sampling are required in order to ensure compliance with permitted emission limits, prohibitory rules, control measures and the assumptions that form the basis of this operating permit.

4.7.1 Permitted IC Engines at the leases not subject to emissions control. None of the fifty-three IC engines require source testing. However, the fuel used by the engines is required to be sampled and analyzed, as listed below. Duplicate samples are required:

Fuel Gas: Sample to be taken from the fuel flow inlet line(s)/header(s) to the engines at the lease concerned. Analysis for high heating value (HHV) shall be measured quarterly, annually for total sulfur, and monthly for hydrogen sulfide (H₂S). [NOTE: Under a County Land Use permit, Greka must keep the gas pipeline fuel S level below 29 ppmvd; Greka continuously monitors its fuel line, using APCD-approved methods (Re: *APCD ATC/PTO*

9412) to comply with this restriction]. Sampling shall be conducted consistent with the APCD approved *Fuel Gas Sulfur and HHV Monitoring Plan*.

All sampling and analyses are required to be performed according to APCD approved procedures and methodologies. Typically, the appropriate ASTM methods are acceptable. It is important that all sampling and analysis be traceable by chain of custody procedures.

4.7.2 Permitted IC engines at the Bell Lease Compressor Plant - NSCR-controlled Caterpillar Engine (#6466). The Caterpillar G-342 is to be source tested annually. The source test requirements are listed in Table 4.7-1. The fuel used by the engine is required to be sampled and analyzed, as listed below. Duplicate samples are required.

- Fuel Gas: Sample to be taken from the fuel flow inlet line to the engine. Analysis for high heating value (HHV) shall be measured quarterly, annually for total sulfur, and monthly for hydrogen sulfide (H₂S).

Table 0-1 Controlled IC Engine Source Test Requirements (Caterpillar G-342)

Emission & Limit Test Points	Pollutants	Parameters^(b)	Test Methods^{(a),(c)}	Concentration (in ppmvd @ 15% O₂)
IC Engine Exhaust @ NSCR exit ^(b)	NO _x	ppmv, lb/hr	EPA Method 7E, ARB 1-100	50, 36
	CO	ppmv, lb/hr	EPA Method 10, ARB 1-100	400, 299
	ROC	ppmv, lb/hr	EPA Method 18	24, 24
	Sampling Point Det. Stack Gas Flow Rate O ₂ Moisture Content	Dry, Mol. Wt	EPA Method 1 EPA Method 2 or 19 EPA Method 3 EPA Method 4	
Fuel Gas	Fuel Gas Flow Rate		Fuel Gas Meter ^(f)	
	Higher Heating Value	BTU/scf	ASTM D 1826-88	
	Total Sulfur Content ^(d)		ASTM D 1072	
Fuel/Air Ratio Controller	O ₂ Sensor Control Setpoint		Millivolt setpoint	
	Inlet NSCR Catalyst O ₂		EPA Method 3	
IC Engine Setup	Ignition Timing		Setting used during test to be documented	

Site Specific Requirements

- (a) Alternative methods may be acceptable on a case-by-case basis.
- (b) The emission rates shall be based on EPA Methods 2 and 4, or Method 19 along with the heat input rate. Measured NO_x, ROC, and CO ppmvd shall not exceed the limits specified in Condition No. 3 of this PTO.
- (c) For NO_x, ROC, CO and O₂ a minimum of three 40-minute runs shall be obtained during each test.
- (d) Total sulfur content fuel samples shall be obtained using EPA Method 18 with Tedlar Bags (or equivalent) equipped with Teflon tubing and fittings. Turnaround time for laboratory analysis of these samples shall be no more than 24 hours from sampling in the field.
- (e) Source testing shall be performed for the IC engine in an "as found" condition operating at a representative, APCD-approved, IC engine load (SCF/hr).
- (f) Fuel meter shall meet the calibration and metered volume corrections specified in Rule 333, §G.3.a.

4.8 Part 70 Engineering Review: Hazardous Air Pollutant Emissions

Hazard air pollutant emissions (HAPs) have not been estimated in this permit.

5. Emissions

5.1 General

This Part 70/APCD PTO 8036 reevaluation addresses operations of the internal combustion engines at the Cat Canyon stationary source. The Part70/ PTO 8036 renewal evaluated any new requirements that needed to be addressed since the last renewal, any applicable changes to the equipment list, and whether monitoring was sufficient for compliance.

Emissions calculations are divided into "permitted" and "exempt" categories. Permit exempt equipment is determined by APCD Rule 202. The permitted emissions for each emissions unit is based on the equipment's potential-to-emit (as defined by Rule 102). Section 5.2 details the permitted emissions for each emissions unit. Section 5.3 details the overall permitted emissions for the facility based on reasonable worst-case scenarios using the potential-to-emit for each emissions unit. Section 5.4 provides the federal potential to emit calculation using the definition of potential to emit used in Rule 1301. Section 5.5 provides the estimated emissions from permit exempt equipment and also serves as the Part 70 list of insignificant emission. Section 5.6 provides the net emissions increase calculation for the facility and the stationary source. In order to accurately track the emissions from a facility, the APCD uses a computer database. Attachment 10.4 contains the APCD's documentation for the information entered into that database.

5.2 Permitted Emission Limits - Emission Units

Each emissions unit associated with the facility was analyzed to determine the potential-to-emit for the following pollutants:

- ⇒ Nitrogen Oxides (NO_x)⁴
- ⇒ Reactive Organic Compounds (ROC)
- ⇒ Carbon Monoxide (CO)
- ⇒ Sulfur Oxides (SO_x)⁵
- ⇒ Particulate Matter (PM)⁶
- ⇒ Particulate Matter smaller than 10 microns (PM₁₀)

Permitted emissions are calculated for both short term (hourly and daily) and long term (quarterly and annual) time periods. Section 4.0 (Engineering Analysis) provides a general discussion of the basic calculation methodologies and emission factors used. The reference documentation for the specific emission calculations, as well as detailed calculation spreadsheets, may be found in Section 4 and Attachments 10.1 and 10.2, respectively.

Tables 5.2-1 and 5.2-2 provide the basic operating characteristics for the uncontrolled and controlled IC engines, respectively. Table 5.2-3 provides the specific emission factors for

⁴ Calculated and reported as nitrogen dioxide (NO₂)

⁵ Calculated and reported as sulfur dioxide (SO₂)

⁶ Calculated and reported as all particulate matter smaller than 100 µm

the controlled and uncontrolled IC engines. Table 5.2-5 and Table 5.2-6 show the permitted short-term and long-term emissions for the uncontrolled IC engines, respectively. Table 5.2-7 and Table 5.2-9 show the permitted short-term and long-term emissions for the controlled IC engines, respectively. Table 5.2-8 and Table 5.2-8 show the permitted short-term and long-term emissions for fugitive hydrocarbon components associated with the Bell Lease Compressor Plant. In each table, the last column indicates whether the emission limits are federally enforceable.

Table 5.2-1
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Operating Equipment Description

Equipment Category	Serial #	APCD De	Device Specifications		Usage Data				Ref.
			BSFC (Btu/bhp-hr)	Capacity (bhp)	hr	day	qtr	year	
Waukesha (145)	1077	3389	10,000	49.5	1	24	2,190	8,760	A
M & M (800)	7852	3450	10,000	48.0	1	24	2,190	8,760	
M & M (605)	8063	3434	11,000	46.0	1	24	2,190	8,760	
M & M (605)	8481	3438	11,000	46.0	1	24	2,190	8,760	
M & M (605)	8495	3407	11,000	46.0	1	24	2,190	8,760	
M & M (283)	8570	3453	11,000	25.0	1	24	2,190	8,760	
M & M (605)	8932	9170	11,000	46.0	1	24	2,190	8,760	
Waukesha (145)	9563	5320	10,000	49.5	1	24	2,190	8,760	
Waukesha (145)	9573	6449	10,000	49.5	1	24	2,190	8,760	
M & M (605)	9628	3443	11,000	46.0	1	24	2,190	8,760	
M & M (605)	9837	8862	11,000	46.0	1	24	2,190	8,760	
Waukesha (145)	9995	6451	10,000	49.5	1	24	2,190	8,760	
M & M (605)	10353	3430	11,000	46.0	1	24	2,190	8,760	
Waukesha (145)	10411	3392	10,000	49.5	1	24	2,190	8,760	
Waukesha (145)	10771	3384	10,000	49.5	1	24	2,190	8,760	
M & M (605)	10890	3426	11,000	46.0	1	24	2,190	8,760	
M & M (425)	10957	6446	10,500	39.0	1	24	2,190	8,760	
Waukesha (145)	10983	3388	10,000	49.5	1	24	2,190	8,760	
Waukesha (145)	11188	5314	10,000	49.5	1	24	2,190	8,760	
Waukesha (145)	11492	5312	10,000	49.5	1	24	2,190	8,760	
Waukesha (145)	11493	5315	10,000	49.5	1	24	2,190	8,760	
Waukesha (145)	11508	5316	10,000	49.5	1	24	2,190	8,760	
Waukesha (145)	11509	3386	10,000	49.5	1	24	2,190	8,760	
Waukesha (145)	11516	3380	10,000	49.5	1	24	2,190	8,760	
Waukesha (145)	11526	3381	10,000	49.5	1	24	2,190	8,760	
Waukesha (145)	11544	3401	10,000	49.5	1	24	2,190	8,760	
Waukesha (145)	11545	6453	10,000	49.5	1	24	2,190	8,760	
Waukesha (817)	11696	3382	10,000	49.5	1	24	2,190	8,760	

Table 5.2-1 Cont.
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Operating Equipment Description

Equipment Category	Serial #	APCD ID#	Device Specifications		Usage Data				Ref.
			BSFC (Btu/bhp-hr)	Capacity (bhp)	hr	day	qtr	year	
Waukesha (140)	11706	6454	10,000	49.5	1	24	2,190	8,760	A
Waukesha (145)	11711	3398	10,000	49.5	1	24	2,190	8,760	
Waukesha (140)	11754	3413	9,100	49.5	1	24	2,190	8,760	
Waukesha (195)	11796	3417	9,100	41.8	1	24	2,190	8,760	
M & M (283)	11826	100349	11,000	25.0	1	24	2,190	8,760	
M & M (605)	11854	3452	11,000	46.0	1	24	2,190	8,760	
M & M (605)	11859	3433	11,000	46.0	1	24	2,190	8,760	
Waukesha (145)	11923	5319	10,000	49.5	1	24	2,190	8,760	
Waukesha (195)	11949	6455	9,100	41.8	1	24	2,190	8,760	
Waukesha (F1197)	12035	6456	9,100	49.5	1	24	2,190	8,760	
M & M (605)	12069	3394	11,000	46.0	1	24	2,190	8,760	
M & M (504)	12175	3435	10,000	48.9	1	24	2,190	8,760	
Waukesha (145)	110006	6458	10,000	49.5	1	24	2,190	8,760	
Waukesha (140)	110008	6448	10,000	49.5	1	24	2,190	8,760	
Waukesha (145)	110009	3390	10,000	49.5	1	24	2,190	8,760	
Waukesha (140)	110011	3412	10,000	49.5	1	24	2,190	8,760	
Waukesha (140)	110015	3441	10,000	49.5	1	24	2,190	8,760	
M & M (605)	110031	8864	11,000	46.0	1	24	2,190	8,760	
M & M (605)	110032	9101	11,000	46.0	1	24	2,190	8,760	
M & M (425)	110034	9103	10,500	39.0	1	24	2,190	8,760	
M & M (425)	110035	9104	10,500	39.0	1	24	2,190	8,760	
M&M (605)	110036	8861	11,000	46.0	1	24	2,190	8,760	
M&M (605)	110037	3405	11,000	46.0	1	24	2,190	8,760	
M & M (605)	11113N	3378	11,000	46.0	1	24	2,190	8,760	
Waukesha (145)	11509S	9100	10,000	49.5	1	24	2,190	8,760	
Total			545,900.0	2,469.5					

Table 5.2-2
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Operating Equipment Description - Controlled IC Engines

Equipment Category	Description	Serial #	APCD ID#	Device Specifications			Usage Data					References
				Fuel	HHV (Btu/scf)	Size (Btu/bhp-hr)	Capacity (MMBtu/hr)	Hour	Day	Qtr	Year	
IC Engines @ Compressor Plant (controlled)	Caterpillar G-342 NAHCR	12253	6466	BLG	1,100	8,140	1.83	1	24	2,190	8,760	B

Notes

FG = Fuel Gas used by leases

BLG = Fuel Gas used at Bell Lease Compressor Plant

Table 5.2-3
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Operating Equipment Description - Controlled IC Engines

Equipment Category	Description	ID#	Device Specifications			Usage Data					References
			Control Efficiency	Size	Units	Capacity	Hour	Day	Qtr	Year	
Fugitive Components @ Compressor Plant	Valves & Fittings	100352	80%	7 cmp-leakpath	--	1	24	2190	8760		C
	Flanges/connections	100353	80%	188 cmp-leakpath	--	1	24	2190	8760		
	Compressor Seals	100355	80%	4 cmp-leakpath	--	1	24	2190	8760		
	Pressure Relief	100355	80%	4 cmp-leakpath	--	1	24	2190	8760		

**Table 5.2-4
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Equipment Emission Factors**

Equipment Category	Description	ID #	Emission Factors							References
			NOx	ROC	CO	SOx	PM	PM10	Units	
Internal Combustion Engines	Uncontrolled ICEs		1.905	0.105	1.600	0.122	0.010	0.010	lb/MMBtu	A
Fugitive Components (at Bell Compressor Plant)	Valves & Fittings	100352		0.018					lb/clp-day	C
	Flanges/connections	100353		0.004					lb/clp-day	
	Compressor Seals	100355		0.133					lb/clp-day	
	Pressure Relief	100355		0.414					lb/clp-day	

Equipment Category	Description	ID #	Emission Factors							References
			NOx	ROC	CO	SOx	PM	PM10	Units	
IC Engines @ Compressor Plant (Controlled)	Caterpillar G-342 NAHCR	6466	0.300	0.150	0.500	n/a	n/a	n/a	g/bhp-hr	B
			0.135	0.080	0.674	0.037	0.009	0.009	lb/MMBTU	
			36	24	299	n/a	n/a	n/a	ppmv @ 15%	

lb/MMBTU to ppmv Constants		
	NOx	ROC
Knglb	269.9	300.6
	CO	
	443.4	
Natural Gas Fuel with "F" factor of:		
	8608	SCF/MMBTU of fuel HHV.

Table 5.2-5
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Short Term Emission Limits by Emission Unit

Description	APCD ID#	NOx	ROC	CO	SOx	PM	PM10	Federal
		lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	Enforceability
Waukesha (145)	3389	22.63	1.25	19.01	1.45	0.12	0.12	AE
M & M (800)	3450	21.95	1.21	18.43	1.41	0.12	0.12	AE
M & M (605)	3434	23.13	1.28	19.43	1.49	0.12	0.12	AE
M & M (605)	3438	23.13	1.28	19.43	1.49	0.12	0.12	AE
M & M (605)	3407	23.13	1.28	19.43	1.49	0.12	0.12	AE
M & M (283)	3453	12.57	0.69	10.56	0.81	0.07	0.07	AE
M & M (605)	9170	23.13	1.28	19.43	1.49	0.12	0.12	AE
Waukesha (145)	5320	22.63	1.25	19.01	1.45	0.12	0.12	AE
Waukesha (145)	6449	22.63	1.25	19.01	1.45	0.12	0.12	AE
M & M (605)	3443	23.13	1.28	19.43	1.49	0.12	0.12	AE
M & M (605)	8862	23.13	1.28	19.43	1.49	0.12	0.12	AE
Waukesha (145)	6451	22.63	1.25	19.01	1.45	0.12	0.12	AE
M & M (605)	3430	23.13	1.28	19.43	1.49	0.12	0.12	AE
Waukesha (145)	3392	22.63	1.25	19.01	1.45	0.12	0.12	AE
Waukesha (145)	3384	22.63	1.25	19.01	1.45	0.12	0.12	AE
M & M (605)	3426	23.13	1.28	19.43	1.49	0.12	0.12	AE
M & M (425)	6446	18.72	1.03	15.72	1.20	0.10	0.10	AE
Waukesha (145)	3388	22.63	1.25	19.01	1.45	0.12	0.12	AE
Waukesha (145)	5314	22.63	1.25	19.01	1.45	0.12	0.12	AE
Waukesha (145)	5312	22.63	1.25	19.01	1.45	0.12	0.12	AE
Waukesha (145)	5315	22.63	1.25	19.01	1.45	0.12	0.12	AE
Waukesha (145)	5316	22.63	1.25	19.01	1.45	0.12	0.12	AE
Waukesha (145)	3386	22.63	1.25	19.01	1.45	0.12	0.12	AE
Waukesha (145)	3380	22.63	1.25	19.01	1.45	0.12	0.12	AE
Waukesha (145)	3381	22.63	1.25	19.01	1.45	0.12	0.12	AE
Waukesha (145)	3401	22.63	1.25	19.01	1.45	0.12	0.12	AE
Waukesha (145)	6453	22.63	1.25	19.01	1.45	0.12	0.12	AE
Waukesha (817)	3382	22.63	1.25	19.01	1.45	0.12	0.12	AE

Description	APCD ID#	NOx	ROC	CO	SOx	PM	PM10	Federal
		lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	Enforceability
Waukesha (140)	6454	22.63	1.25	19.01	1.45	0.12	0.12	AE
Waukesha (145)	3398	22.63	1.25	19.01	1.45	0.12	0.12	AE
Waukesha (140)	3413	20.59	1.14	17.30	1.32	0.11	0.11	AE
Waukesha (195)	3417	17.39	0.96	14.61	1.12	0.09	0.09	AE
M & M (283)	100349	12.57	0.69	10.56	0.81	0.07	0.07	AE
M & M (605)	3452	23.13	1.28	19.43	1.49	0.12	0.12	AE
M & M (605)	3433	23.13	1.28	19.43	1.49	0.12	0.12	AE
Waukesha (145)	5319	22.63	1.25	19.01	1.45	0.12	0.12	AE
Waukesha (195)	6455	17.39	0.96	14.61	1.12	0.09	0.09	AE
Waukesha (F1197)	6456	20.59	1.14	17.30	1.32	0.11	0.11	AE
M & M (605)	3394	23.13	1.28	19.43	1.49	0.12	0.12	AE
M & M (504)	3435	22.36	1.23	18.78	1.44	0.12	0.12	AE
Waukesha (145)	6458	22.63	1.25	19.01	1.45	0.12	0.12	AE
Waukesha (140)	6448	22.63	1.25	19.01	1.45	0.12	0.12	AE
Waukesha (145)	3390	22.63	1.25	19.01	1.45	0.12	0.12	AE
Waukesha (140)	3412	22.63	1.25	19.01	1.45	0.12	0.12	AE
Waukesha (140)	3441	22.63	1.25	19.01	1.45	0.12	0.12	AE
M & M (605)	8864	23.13	1.28	19.43	1.49	0.12	0.12	AE
M & M (605)	9101	23.13	1.28	19.43	1.49	0.12	0.12	AE
M & M (425)	9103	18.72	1.03	15.72	1.20	0.10	0.10	AE
M & M (425)	9104	18.72	1.03	15.72	1.20	0.10	0.10	AE
M&M (605)	8861	23.13	1.28	19.43	1.49	0.12	0.12	AE
M&M (605)	3405	23.13	1.28	19.43	1.49	0.12	0.12	AE
M & M (605)	3378	23.13	1.28	19.43	1.49	0.12	0.12	AE
Waukesha (145)	9100	22.63	1.25	19.01	1.45	0.12	0.12	AE
Emissions Total:		1,160.15	63.95	974.41	74.48	6.09	6.09	

Table 5.2-6
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Long Term Emission Limits by Emission Unit

Description	APCD ID#	NO_x	ROC	CO	SO_x	PM	PM₁₀	Federal
		TPY	TPY	TPY	TPY	TPY	TPY	Enforceability
Waukesha (145)	3389	4.13	0.23	3.47	0.27	0.02	0.02	AE
M & M (800)	3450	4.01	0.22	3.36	0.26	0.02	0.02	AE
M & M (605)	3434	4.22	0.23	3.55	0.27	0.02	0.02	AE
M & M (605)	3438	4.22	0.23	3.55	0.27	0.02	0.02	AE
M & M (605)	3407	4.22	0.23	3.55	0.27	0.02	0.02	AE
M & M (283)	3453	2.29	0.13	1.93	0.15	0.01	0.01	AE
M & M (605)	9170	4.22	0.23	3.55	0.27	0.02	0.02	AE
Waukesha (145)	5320	4.13	0.23	3.47	0.27	0.02	0.02	AE
Waukesha (145)	6449	4.13	0.23	3.47	0.27	0.02	0.02	AE
M & M (605)	3443	4.22	0.23	3.55	0.27	0.02	0.02	AE
M & M (605)	8862	4.22	0.23	3.55	0.27	0.02	0.02	AE
Waukesha (145)	6451	4.13	0.23	3.47	0.27	0.02	0.02	AE
M & M (605)	3430	4.22	0.23	3.55	0.27	0.02	0.02	AE
Waukesha (145)	3392	4.13	0.23	3.47	0.27	0.02	0.02	AE
Waukesha (145)	3384	4.13	0.23	3.47	0.27	0.02	0.02	AE
M & M (605)	3426	4.22	0.23	3.55	0.27	0.02	0.02	AE
M & M (425)	6446	3.42	0.19	2.87	0.22	0.02	0.02	AE
Waukesha (145)	3388	4.13	0.23	3.47	0.27	0.02	0.02	AE
Waukesha (145)	5314	4.13	0.23	3.47	0.27	0.02	0.02	AE
Waukesha (145)	5312	4.13	0.23	3.47	0.27	0.02	0.02	AE
Waukesha (145)	5315	4.13	0.23	3.47	0.27	0.02	0.02	AE
Waukesha (145)	5316	4.13	0.23	3.47	0.27	0.02	0.02	AE
Waukesha (145)	3386	4.13	0.23	3.47	0.27	0.02	0.02	AE
Waukesha (145)	3380	4.13	0.23	3.47	0.27	0.02	0.02	AE
Waukesha (145)	3381	4.13	0.23	3.47	0.27	0.02	0.02	AE
Waukesha (145)	3401	4.13	0.23	3.47	0.27	0.02	0.02	AE
Waukesha (145)	6453	4.13	0.23	3.47	0.27	0.02	0.02	AE
Waukesha (817)	3382	4.13	0.23	3.47	0.27	0.02	0.02	AE

Description	APCD ID#	NO _x	ROC	CO	SO _x	PM	PM ₁₀	Federal
		TPY	TPY	TPY	TPY	TPY	TPY	Enforceability
Waukesha (140)	6454	4.13	0.23	3.47	0.27	0.02	0.02	AE
Waukesha (145)	3398	4.13	0.23	3.47	0.27	0.02	0.02	AE
Waukesha (140)	3413	3.76	0.21	3.16	0.24	0.02	0.02	AE
Waukesha (195)	3417	3.17	0.17	2.67	0.20	0.02	0.02	AE
M & M (283)	100349	2.29	0.13	1.93	0.15	0.01	0.01	AE
M & M (605)	3452	4.22	0.23	3.55	0.27	0.02	0.02	AE
M & M (605)	3433	4.22	0.23	3.55	0.27	0.02	0.02	AE
Waukesha (145)	5319	4.13	0.23	3.47	0.27	0.02	0.02	AE
Waukesha (195)	6455	3.17	0.17	2.67	0.20	0.02	0.02	AE
Waukesha (F1197)	6456	3.76	0.21	3.16	0.24	0.02	0.02	AE
M & M (605)	3394	4.22	0.23	3.55	0.27	0.02	0.02	AE
M & M (504)	3435	4.08	0.22	3.43	0.26	0.02	0.02	AE
Waukesha (145)	6458	4.13	0.23	3.47	0.27	0.02	0.02	AE
Waukesha (140)	6448	4.13	0.23	3.47	0.27	0.02	0.02	AE
Waukesha (145)	3390	4.13	0.23	3.47	0.27	0.02	0.02	AE
Waukesha (140)	3412	4.13	0.23	3.47	0.27	0.02	0.02	AE
Waukesha (140)	3441	4.13	0.23	3.47	0.27	0.02	0.02	AE
M & M (605)	8864	4.22	0.23	3.55	0.27	0.02	0.02	AE
M & M (605)	9101	4.22	0.23	3.55	0.27	0.02	0.02	AE
M & M (425)	9103	3.42	0.19	2.87	0.22	0.02	0.02	AE
M & M (425)	9104	3.42	0.19	2.87	0.22	0.02	0.02	AE
M&M (605)	8861	4.22	0.23	3.55	0.27	0.02	0.02	AE
M&M (605)	3405	4.22	0.23	3.55	0.27	0.02	0.02	AE
M & M (605)	3378	4.22	0.23	3.55	0.27	0.02	0.02	AE
Waukesha (145)	9100	4.13	0.23	3.47	0.27	0.02	0.02	AE
Emissions Total:		211.73	11.67	177.83	13.59	1.11	1.11	

Table 5.2-7
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Long Term Emission Limits by Emission Unit
Operating Equipment Description - Controlled IC Engines

Equipment Category	Description	NOx		ROC		CO		SOx		PM		PM10		Federal Enforceability
		TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	
IC Engines @ Compressor Plant (controlled)	Caterpillar G-342 NAHCR	0.27 [✓]	1.08	0.16 [✓]	0.64	0.27 [✓]	1.08	0.07 [✓]	0.29	0.27 [✓]	1.08	0.27	1.08	FE
Emissions Total: IC Engines		0.27	1.08	0.16	0.64	0.27	1.08	0.07	0.29	0.27	1.08	0.27	1.08	

Notes

FE = federally enforceable
A = APCD-only enforceable
NE = not enforceable

Table 5.2-8
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Long Term Emission Limits by Emission Unit
Operating Equipment Description - Controlled IC Engines

Equipment Category	Description	NOx	ROC	CO	SOx	PM	PM10	Federal Enforceability
		TPY	TPY	TPY	TPY	TPY	TPY	
Fugitive Components @ Compressor Plant	Valves & Fittings	--	0.023	--	--	--	--	FE
	Flanges/connections	--	0.149	--	--	--	--	FE
	Compressor Seals	--	0.097	--	--	--	--	FE
	Pressure Relief	--	0.302	--	--	--	--	FE
Emissions Total: Fugitive Components		0.00	0.57	0.00	0.00	0.00	0.00	

Notes

FE = federally enforceable
A = APCD-only enforceable
NE = not enforceable

5.3 Permitted Emission Limits - Facility Totals

The total potential-to-emit for all emission units associated with the facility was analyzed. This analysis looked at the reasonable worst-case operating scenarios for each operating period. The equipment operating in each of the scenarios are presented below. Unless otherwise specified, the operating characteristics defined in Table 5.2-1 and Table 5.2-2 for each emission unit are assumed. Table 5.3-1 shows the total permitted emissions for the facility.

Short Term Scenario:

- Internal Combustion Units (uncontrolled)
- Internal Combustion Units (controlled)
- Fugitive Components

Long Term Scenario:

- Internal Combustion Units (uncontrolled)
- Internal Combustion Units (controlled)
- Fugitive Components

Table 5.3-1 Total Permitted Facility Emissions**A. Hourly**

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Internal Combustion Engines - controlled	0.25	0.15	1.23	0.07	0.02	0.02
Totals (lb/hr)	0.25	0.15	1.23	0.07	0.02	0.02

B. Daily

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Internal Combustion Engines - uncontrolled	1,160.15	63.95	974.41	74.48	6.09	6.09
Internal Combustion Engines - controlled	5.92	3.51	29.62	1.61	0.40	0.40
Fugitive Components	0.00	3.13	0.00	0.00	0.00	0.00
Totals (lb/day)	1,166.08	70.58	1,004.02	76.09	6.49	6.49

C. Quarter

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Internal Combustion Engines - controlled	0.27	0.16	0.27	0.07	0.27	0.27
Totals (TPQ)	0.27	0.16	0.27	0.07	0.27	0.27

D. Annual

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Internal Combustion Engines - uncontrolled	211.73	11.67	177.83	13.59	1.11	1.11
Internal Combustion Engines - controlled	1.08	0.64	1.08	0.29	1.08	1.08
Fugitive Components	0.00	0.57	0.00	0.00	0.00	0.00
Totals (TPY)	212.81	12.88	178.91	13.89	2.19	2.19

5.4 **Part 70: Federal Potential to Emit for the Facility**

Table 5.4-1 lists the federal Part 70 potential to emit. For facilities subject to Part 70 Regulation, all emissions, except fugitive emissions, are counted in the federal definition of potential to emit. However, fugitives are counted in the Federal potential to emit if the facility is subject to any applicable NSPS or NESHAP requirement. ICE Facility is not subject to any NSPS/NESHAP.

Table 5.4-1 Federal Potential to Emit

A. Hourly

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Internal Combustion Engines - controlled	0.25	0.15	1.23	0.07	0.02	0.02
Totals (lb/hr)	0.25	0.15	1.23	0.07	0.02	0.02

B. Daily

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Internal Combustion Engines - uncontrolled	1,160.15	63.95	974.41	74.48	6.09	6.09
Internal Combustion Engines - controlled	5.92	3.51	29.62	1.61	0.40	0.40
Totals (lb/day)	1,166.08	67.45	1,004.02	76.09	6.49	6.49

C. Quarter

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Internal Combustion Engines - controlled	0.27	0.16	0.27	0.07	0.27	0.27
Totals (TPQ)	0.27	0.16	0.27	0.07	0.27	0.27

D. Annual

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Internal Combustion Engines - uncontrolled	211.73	11.67	177.83	13.59	1.11	1.11
Internal Combustion Engines - controlled	1.08	0.64	1.08	0.29	1.08	1.08
Totals (TPY)	212.81	12.31	178.91	13.89	2.19	2.19

5.5 Exempt Emission Sources/Part 70 Insignificant Emissions

Insignificant emission units are defined under APCD Rule 1301 as any regulated air pollutant emitted from the unit, excluding HAPs, that are less than 2 tons per year based on the unit's potential to emit and any HAP regulated under section 112(g) of the Clean Air Act that does not exceed 0.5 ton per year based on the unit's potential to emit. The following emission units are exempt from permit per Rule 202, but are not considered insignificant emission units:

- Solvents/Surface coating operations used maintenance operations

Table 5.5-1 presents the estimated annual emissions from these exempt equipment items, including those exempt items not considered insignificant. This permit covers the Solvents/Surface coating operations used maintenance operations.

Table 5.5-1 Estimated Permit Exempt Emissions

5.6 Net Emissions Increase (NEI) Calculation

The NEI Equation used by the APCD is: $NEI = I + (P1 - P2) - D$

Where:

- I = Potential to emit of the modification
- P1 = All prior PTE increases requiring permits on or after 11/15/1990
- P2 = All prior PTE decreases requiring permits on or after 11/15/1990
- D = Pre-1990 baseline actual emission decreases = zero

This facility's net emissions increase since November 15, 1990 (the day the federal Clean Air Act Amendments was adopted in 1990) is listed in Table 5.6-1.

The Greka Cat Canyon stationary source NEI is listed in Attachment 10.4 of this permit.

Table 5.6-1 ICE Facility Net Emissions Increase (NEI-90)

Facility	Permit	Description	Issued	Units	NOx	ROC	CO	Sox	PM	PM10
ICE Facility	ATC 9610	(2) Waukesha 6LRZ, Cat G-342, Wauk F-1197	12/23/1996	lbs/hr	0.82	0.32	1.36	1.62	0.10	0.10
				lbs/day	19.59	7.63	32.64	38.83	2.34	2.34
				TPQ	0.89	0.35	1.49	1.77	0.11	0.11
				TPY	3.57	1.39	5.96	7.09	0.43	0.43
Bell Lease	ATC 9975	Add Waukesha F3521GSI 747 hp	I (10/98)	lbs/hr	0.25	0.62	1.23	0.24	0.06	0.06
				lbs/day	5.92	11.84	29.62	5.68	1.55	1.55
				TPQ	0.27	0.68	1.35	0.26	0.07	0.07
				TPY	1.08	2.73	5.41	1.04	0.28	0.28
Bell Lease	ATC 9975	Remove Clark HRA-8	D (10/98)	lbs/hr	3.30	10.79	9.76	0.97		
				lbs/day	79.31	259.05	234.31	21.24		
				TPQ	3.44	11.23	10.15	0.94		
				TPY	13.74	44.91	40.58	3.75		
Bell Lease	DOI 006	ERC Creation	11/1/1998	lbs/hr	2.23	8.36	2.59			
				lbs/day	53.80	218.80	62.13			
				TPQ	2.28	9.38	2.62			
				TPY	9.09	37.55	10.46			
ICE Facility	ATC 10133	Increase emission limits Cat and Wauk F-1197	5/18/1999	lbs/hr	0.55	0.19	3.56	-0.38	0.01	0.01
				lbs/day	13.31	4.65	85.32	-9.06	0.17	0.17
				TPQ	0.61	0.21	3.89	-0.41	0.01	0.01
				TPY	2.43	0.85	15.56	-1.65	0.03	0.03
ICE Facility	ATC 10421	Add SSC Technology to Wauk F-1197	6/1/2001	lbs/hr		0.42				
				lbs/day		10.17				
				TPQ		0.46				
				TPY		1.85				
ICE Facility	ATC/PTO 10919 Cancellation	(P2) Remove Waukesha 6LRZ (1) from permit	5/1/2003	lbs/hr	0.27	0.09	0.45	0.54	0.03	0.03
				lbs/day	6.50	2.17	10.84	12.94	0.78	0.78
				TPQ	0.30	0.10	0.50	0.59	0.04	0.04
				TPY	1.19	0.40	1.98	2.36	0.14	0.14
ICE Facility	Part 70/PTO 8036 Mod	(P2) Remove Waukesha 6LRZ (2) from permit	5/1/2003	lbs/hr	0.27	0.09	0.45	0.54	0.03	0.03
				lbs/day	6.50	2.17	10.84	12.94	0.78	0.78
				TPQ	0.30	0.10	0.50	0.59	0.04	0.04
				TPY	1.19	0.40	1.98	2.36	0.14	0.14
ICE Facility	Part 70/PTO 8036 Reeval	(P2) Remove Waukesha F3521GSI (1) from permit	12/1/2003	lbs/hr	0.25	0.62	1.23	0.24	0.06	0.06
				lbs/day	5.92	11.84	29.62	5.68	1.55	1.55
				TPQ	0.27	0.68	1.35	0.26	0.07	0.07
				TPY	1.08	2.73	5.41	1.04	0.28	0.28
	Facility NEI Contribution		P1	lbs/hr	-0.24	-1.67	-3.16	-0.81	0.05	0.05
				lbs/day	-5.61	-22.14	-75.90	-17.35	0.95	0.95
				TPQ	-0.26	-1.03	-3.14	-0.76	0.05	0.05
				TPY	-1.03	-4.07	-12.56	-3.03	0.18	0.18

6. Air Quality Impact Analyses

6.1 Modeling

Air quality modeling was not required for this stationary source.

6.2 Increments

An air quality increment analysis was not required for this stationary source

6.3 Monitoring

Air quality monitoring is not required for this stationary source.

6.4 Health Risk Assessment

The Greka Cat Canyon stationary source is subject to the Air Toxics Hot-Spots Program (AB-2588). A health risk assessment (HRA) for the Greka Cat Canyon stationary source, as configured at the time, was prepared by the APCD in 2000 under the requirements of the Air Toxics “Hot Spots” Information and Assessment Act of 1987 (AB 2588). The HRA is based on 1998 toxic emissions inventory data submitted to the APCD by Greka.

Based on the 1998 toxic emissions inventory, a cancer risk of 12 per million at the property boundary was estimated for part of the Cat Canyon stationary source, which included the Bell, Blockman and Palmer-Stendl leases and all associated equipment. This risk is primarily due to emissions of polycyclic aromatic hydrocarbons (PAHs) and acrolein from internal combustion engines and gas-fired boilers. The hazard index (HI) for the facilities was determined to be 0.27 for chronic risk, and 22.93 for acute risk. HI is a ratio of the predicted concentration of the facilities reported emissions to a concentration considered acceptable to public health professionals. The baseline for significant cancer risk is 10 and for non-cancer risk is 1, therefore both the cancer and acute risk are considered significant. The cancer and non-cancer chronic risk projections are over the APCD’s AB-2588 significance thresholds of 10 in a million and 1.0 respectively.

A separate HRA was completed for the Dominion and UCB leases since the leases historically were owned and operated by Dominion Oil Company, separate from the current owners/operators of the Greka Cat Canyon source. Based on the 1998 toxic emissions inventory, these two leases were assessed a cancer risk of 2 per million at the property boundary. This risk is primarily due to emissions of acrolein from internal combustion engines and gas-fired boilers. The hazard index (HI) for the facilities was determined to be 0.05 for chronic risk, and 4.3 for acute risk. The baseline for significant non-cancer risk is 1, therefore only the acute risk is considered significant.

An HRA for the Vintage Petroleum West Cat Canyon leases was completed in June 1993, including Goodwin A, Lloyd, Mortensen, and Security Fee leases. Based on the 1991 toxic emissions inventory, these four leases were assessed a cancer risk of 4 per million at the property boundary. The hazard index (HI) for the facilities was determined to be 0.5 for

chronic risk, and 0.7 for acute risk. The baseline for significant non-cancer risk is 1, therefore neither the acute or chronic risk is considered significant.

The APCD is currently reviewing an Air Toxics Emission Inventory Report (ATEIR) for reporting year 2003 for the stationary source. Upon APCD approval of the ATEIR, the APCD will conduct a health risk assessment using the Hotspots Analysis and Reporting Program (HARP) software. The HRA, based on reporting year 2003, is expected to be completed in 2009.

7. CAP Consistency, Offset Requirements and ERCs

7.1 General

Santa Barbara County has been classified as non attainment for the state eight-hour ozone standard as well as the state 24-hour and annual PM₁₀ ambient air quality standards. The County is either in attainment of or unclassified with respect to all other state ambient air quality standards.

Santa Barbara County's air quality has historically violated federal ozone standards. Since 1999 however, local air quality data show that every monitoring location in the County complied with the federal one-hour ambient air quality standard for ozone. The Santa Barbara County Air Pollution District adopted the 2001 Clean Air Plan (2001 CAP) that demonstrated attainment of the federal one-hour ozone standard and continued maintenance of that standard through 2015. Consequently, on August 8, 2003, the United States Environmental Protection Agency (USEPA) designated Santa Barbara County as an attainment area for the federal one-hour ozone standard.

On June 15, 2004, USEPA replaced the federal one-hour ozone standard with an eight-hour ozone standard. This eight-hour ozone standard, originally promulgated by USEPA on July 18, 1997, was set at 0.08 parts per million measured over eight hours and is more protective of public health and more stringent than the federal one-hour standard. In March 2008, USEPA lowered that standard to 0.075 parts per million. While USEPA has yet to formally designate Santa Barbara County with respect to the 0.075 parts per million standard, the state has recommended to USEPA that Santa Barbara County be designated as attainment.

Therefore, emissions from all emission units at the stationary source and its constituent facilities must be consistent with the provisions of the USEPA and State approved Clean Air Plans (CAP) and must not interfere with progress toward attainment or maintenance of federal and state ambient air quality standards. Under APCD regulations, any modifications at this facility (or the South Cat Canyon Stationary Source) that result in an emissions increase of any nonattainment pollutant exceeding 25 lbs/day must apply BACT (NAR). Additional increases may trigger offsets at the source or elsewhere so that there is a net air quality benefit for Santa Barbara County. These offset threshold levels are 55 lbs/day for all non-attainment pollutants except PM₁₀ for which the level is 80 lbs/day. These thresholds apply to net emission increases since November 15, 1990 as defined in District Rule 801.

7.2 Clean Air Plan

On August 16, 2007, the APCD Board adopted the 2007 Clean Air Plan to chart a course of action that provided for ongoing maintenance of the federal eight-hour ozone standard through the year 2014, as well as the expeditious attainment of the state one-hour ozone standard. These plans were developed for Santa Barbara County as required by both the 1998 California Clean Air Act and the 1990 Federal Clean Air Act Amendments. Santa Barbara County has now attained the state one-hour ozone standard but does not attain the state eight-hour ozone standard.

In 2010 the APCD will update those provisions of the 2007 Clean Air Plan which demonstrate expeditious attainment of the state eight-hour ozone standard. No changes will be made 2007 Clean Air Plan sections which demonstrate continued maintenance of the federal eight-hour ozone standard.

7.3 Offset Requirements

The Greka South Cat Canyon stationary source does not trigger offsets.

7.4 Emission Reduction Credits

Emission reduction credits, granted to Greka, are detailed in revised DOI 006 issued to Greka by the APCD, in May 2003. The ERC's are based on IC Engine emission reductions at the Bell Lease Compressor Plant [Re: *APCD PTO 8036, ATC 9975-01, DOI 006-02*]. The original ERC certificate #0011-1103 issued to Greka per DOI 006 has since been sold in part to various sources within Santa Barbara County. ERC certificate #0096-1108 includes the remaining portion (CO credits) of the original ERC owned by Greka. This ERC certificate was renewed in November 2008 as certificate #0189.

8. Lead Agency Permit Consistency

To the best of the APCD's knowledge, no other governmental agency's permit requires air quality mitigation for emissions pursuant to this permit issued to the ICE Facility.

9. Permit Conditions

This section lists the applicable permit conditions for ICE Facility. Section A lists the standard administrative conditions. Section B lists 'generic' permit conditions, including emission standards, for all equipment in this permit. Section C lists conditions affecting specific equipment. Section D lists non-federally enforceable (i.e., APCD only) permit conditions. Conditions listed in Sections A, B and C are enforceable by the USEPA, the APCD, the State of California and the public. Conditions listed in Section D are enforceable only by the APCD and the State of California. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit, that part of the permit referred to is federally enforceable. In case of a discrepancy between the wording of a condition and the applicable federal or APCD rule(s), the wording of the rule shall control.

For the purposes of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this permit, nothing in the permit

shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test had been performed

9.A Standard Administrative Conditions

The following federally-enforceable administrative permit conditions apply to ICE Facility:

Section 9.A Standard Administrative Conditions

Number	Title
A.1	Compliance with Permit Conditions
A.2	Emergency Provisions
A.3	Compliance Plan
A.4	Right of Entry
A.5	Permit Life
A.6	Payment of Fees
A.7	Prompt Reporting of Deviations
A.8	Reporting Requirements/Compliance Certification
A.9	Federally Enforceable Conditions
A.10	Recordkeeping Requirements
A.11	Conditions for Permit Reopening
A.12	Credible Evidence

A.1 Compliance with Permit Conditions.

- (a) The permittee shall comply with all permit conditions in Sections 9.A, 9.B and 9.C.
- (b) This permit does not convey property rights or exclusive privilege of any sort.
- (c) Any permit noncompliance with sections 9.A, 9.B, or 9.C constitutes a violation of the Clean Air Act and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application.
- (d) It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- (e) A pending permit action or notification of anticipated noncompliance does not stay any permit conditions.
- (f) Within a reasonable time period, the permittee shall furnish any information requested by the Control Officer, in writing, for the purpose of determining:
 - (i) Compliance with the permit, or
 - (ii) Whether or not cause exists to modify, revoke and reissue, or terminate a permit or for an enforcement action.
- (g) In the event that any condition herein is determined to be in conflict with any other condition contained herein, then, if principles of law do not provide to the contrary,

the condition most protective of air quality and public health and safety shall prevail to the extent feasible. *[Re: 40 CFR Part 70.6.(a)(6), APCD Rules 1303.D.1]*

- A.2 **Emergency Provisions.** The permittee shall comply with the requirements of the APCD, Rule 505 (Upset/Breakdown rule) and/or APCD Rule 1303.F, whichever is applicable to the emergency situation. In order to maintain an affirmative defense under Rule 1303.F, the permittee shall provide the APCD, in writing, a “notice of emergency” within 2 working days of the emergency. The “notice of emergency” shall contain the information/documentation listed in Sections (1) through (5) of Rule 1303.F. *[Re: 40 CFR 70.6(g), APCD Rule 1303.F]*
- A.3 **Compliance Plan.**
- (a) The permittee shall comply with all federally enforceable requirements that become applicable during the permit term in a timely manner.
 - (b) For all applicable equipment, the permittee shall implement and comply with any specific compliance plan required under any federally-enforceable rules or standards. *[Re: APCD Rule 1302.D.2]*
- A.4 **Right of Entry.** The Regional Administrator of USEPA, the Control Officer, or their authorized representatives, upon the presentation of credentials, shall be permitted to enter upon the premises where a Part 70 Source is located or where records must be kept:
- (a) To inspect the stationary source, including monitoring and control equipment, work practices, operations, and emission-related activity;
 - (b) To inspect and duplicate, at reasonable times, records required by this Permit to Operate;
 - (c) To sample substances or monitor emissions from the source or assess other parameters to assure compliance with the permit or applicable requirements, at reasonable times. Monitoring of emissions can include source testing. *[Re: APCD Rule 1303.D.2]*
- A.5 **Permit Life.** The Part 70 permit shall become invalid three years from the date of issuance unless a timely and complete renewal application is submitted to the APCD. Any operation of the source to which this Part 70 permit is issued beyond the expiration date of this Part 70 permit and without a valid Part 70 operating permit (or a complete Part 70 permit renewal application) shall be a violation of the CAAA, § 502(a) and 503(d) and of the APCD rules.
- (a) The permittee shall apply for renewal of the Part 70 permit no later than 6 months before the date of the permit expiration. Upon submittal of a timely and complete renewal application, the Part 70 permit shall remain in effect until the Control Officer issues or denies the renewal application. *[Re: APCD Rule 1304.D.1]*
- A.6 **Payment of Fees.** The permittee shall reimburse the APCD for all its Part 70 permit processing and compliance expenses for the stationary source on a timely basis. Failure to reimburse on a timely basis shall be a violation of this permit and of applicable requirements and can result in forfeiture of the Part 70 permit. Operation without a Part 70 permit subjects the source to potential enforcement action by the APCD and the USEPA pursuant to section 502(a) of the Clean Air Act. *[Re: APCD Rules 1303.D.1 and 1304.D.11, 40 CFR 70.6(a)(7)]*
- A.7 **Prompt Reporting of Deviations.** The permittee shall submit a written report to the APCD documenting each and every deviation from the requirements of this permit or any applicable

federal requirements within seven (7) days after discovery of the violation, but not later than six (6) months after the date of occurrence. The report shall clearly document 1) the probable cause and extent of the deviation, 2) equipment involved, 3) the quantity of excess pollutant emissions, if any, and 4) actions taken to correct the deviation. The requirements of this condition shall not apply to deviations reported to APCD in accordance with Rule 505, Breakdown Conditions, or Rule 1303.F Emergency Provisions. [APCD Rule 1303.D.1, 40 CFR 70.6(a) (3)]

- A.8 **Reporting Requirements/Compliance Certification.** The permittee shall submit compliance certification reports to the USEPA and the Control Officer every six months. These reports shall be submitted on APCD forms and shall identify each applicable requirement/condition of the permit, the compliance status with each requirement/condition, the monitoring methods used to determine compliance, whether the compliance was continuous or intermittent, and include detailed information on the occurrence and correction of any deviations (excluding emergency upsets) from permit requirement. The reporting periods shall be each half of the calendar year, e.g., January through June for the first half of the year. These reports shall be submitted by September 1st and March 1st, respectively, each year. Supporting monitoring data shall be submitted in accordance with the “Semi-Annual Compliance Verification Report” condition in section 9.C. The permittee shall include a written statement from the responsible official, which certifies the truth, accuracy, and completeness of the reports. [Re: APCD Rules 1303.D.1, 1302.D.3, 1303.2.c]
- A.9 **Federally Enforceable Conditions.** Each federally enforceable condition in this permit shall be enforceable by the USEPA and members of the public. None of the conditions in the APCD-only enforceable section of this permit are federally enforceable or subject to the public/USEPA review. [Re: CAAA, §502(b)(6), 40 CFR 70.6(b)]
- A.10 **Recordkeeping Requirements.** The permittee shall maintain records of required monitoring information that include the following:
- (a) The date, place as defined in the permit, and time of sampling or measurements;
 - (b) The date(s) analyses were performed;
 - (c) The company or entity that performed the analyses;
 - (d) The analytical techniques or methods used;
 - (e) The results of such analyses; and
 - (f) The operating conditions as existing at the time of sampling or measurement;
- The records (electronic or hard copy), as well as all supporting information including calibration and maintenance records, shall be maintained for a minimum of five (5) years from date of initial entry by the permittee and shall be made available to the APCD upon request. [Re: APCD Rule 1303.D.1.f, 40 CFR 70.6(a)(3)(ii)(A)]
- A.11 **Conditions for Permit Reopening.** The permit shall be reopened and revised for cause under any of the following circumstances:
- (a) Additional Requirements: If additional applicable requirements (e.g., NSPS or MACT) become applicable to the source which has an unexpired permit term of three (3) or more years, the permit shall be reopened. Such a reopening shall be completed no later than 18 months after promulgation of the applicable requirement.

However, no such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended. All such re-openings shall be initiated only after a 30 day notice of intent to reopen the permit has been provided to the permittee, except that a shorter notice may be given in case of an emergency.

- (b) **Inaccurate Permit Provisions:** If the APCD or the USEPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit, the permit shall be reopened. Such re-openings shall be made as soon as practicable.
- (c) **Applicable Requirement:** If the APCD or the USEPA determines that the permit must be revised or revoked to assure compliance with any applicable requirement including a federally enforceable requirement, the permit shall be reopened. Such re-openings shall be made as soon as practicable.
- (d) Administrative procedures to reopen a permit shall follow the same procedures as apply to initial permit issuance. Re-openings shall affect only those parts of the permit for which cause to reopen exists. If the permit is reopened, and revised, it will be reissued with the expiration date that was listed in the permit before the re-opening. *[Re: 40 CFR 70.7(f), 40 CFR 70.6(a)]*

A.12 **Credible Evidence.** Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defenses otherwise available to the permittee, including but not limited to, any challenge to the Credible Evidence Rule (see 62 Fed. Reg. 8314, Feb. 24, 1997), in the context of any future proceeding. *[Re: 40 CFR 52.12(c)]*

The standard administrative conditions listed below (A.13 through A.18) apply to the controlled IC engines and the IC engines permitted to operate at the Bell Lease Compressor Plant. *[Re: APCD ATC 9610, 9975]*

Section 9.A Standard Administrative Conditions

Number	Title
A.13	Condition Acceptance
A.14	Grounds for Revocation
A.15	Defense of Permit
A.16	Access to Records and Facilities
A.17	Compliance
A.18	Consistency with Analysis

A.13 **Condition Acceptance.** Acceptance of this operating permit by Greka shall be considered as acceptance of all terms, conditions, and limits of this permit. *[Re: APCD ATC 9975]*

- A.14 **Grounds for Revocation.** Failure to abide by and faithfully comply with this permit or any Rule, Order, or Regulation may constitute grounds for revocation pursuant to California Health & Safety Code Section 42307 *et seq.* [Re: APCD ATC 9975]
- A.15 **Defense of Permit.** Greka agrees, as a condition of the issuance and use of this permit, to defend at its sole expense any action brought against the APCD because of issuance of this permit. Greka shall reimburse the APCD for any and all costs including, but not limited to, court costs and attorney's fees which the APCD may be required by a court to pay as a result of such action. The APCD may, at its sole discretion, participate in the defense of any such action, but such participation shall not relieve Greka of its obligation under this condition. The APCD shall bear its own expenses for its participation in the action. [Re: APCD ATC 9975]
- A.16 **Access to Records and Facilities.** As to any condition that requires for its effective enforcement the inspection of records or facilities by the APCD or its agents, Greka shall make such records available or provide access to such facilities upon notice from the APCD. Access shall mean access consistent with California Health and Safety Code Section 41510 and Clean Air Act Section 114A. [Re: APCD ATC 9975]
- A.17 **Compliance.** Nothing contained within this permit shall be construed to allow the violation of any local, State, or Federal rule, regulation, ambient air quality standard or air quality increment. [Re: APCD ATC 9610, ATC 9975]
- A.18 **Consistency with Analysis.** Operation under this permit shall be conducted consistent with all data, specifications and assumptions included with the application and supplements thereof (as documented in the APCD's project file) and the APCD's analyses under which this permit is issued as documented in the Permit Analyses prepared for and issued with the permit. [Re: APCD ATC 9610, ATC 9975]

9.B. Generic Conditions

The generic conditions listed below apply to all emission units, regardless of their category or emission rates. These conditions are federally enforceable. Compliance with these requirements is discussed in Section 3. In case of a discrepancy between the wording of a condition and the applicable federal or APCD rule(s), the wording of the rule shall control.

Section 9.B Generic Permit Conditions

Number	Title
B.1	Circumvention (Rule 301).
B.2	Visible Emissions (Rule 302).
B.3	Nuisance (Rule 303).
B.4	PM Concentration - North Zone (Rule 304).
B.5	Specific Contaminants (Rule 309).
B.6	Sulfur Content of Fuels (Rule 311).
B.7	Organic Solvents (Rule 317).
B.8	Metal Surface Coating Thinner and Reducer (Rule 322).
B.9	Architectural Coatings (Rule 323).
B.10	Disposal and Evaporation of Solvents (Rule 324).
B.11	Adhesives and Sealants (Rule 353).
B.12	Oil and Natural Gas Production MACT (Subpart HH)

- B.1 **Circumvention (Rule 301).** A person shall not build, erect, install, or use any article, machine, equipment or other contrivance, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Division 26 (Air Resources) of the Health and Safety Code of the State of California or of these Rules and Regulations. This Rule shall not apply to cases in which the only violation involved is of Section 41700 of the Health and Safety Code of the State of California, or of APCD Rule 303. *[Re: APCD Rule 301]*
- B.2 **Visible Emissions (Rule 302).** Greka shall not discharge into the atmosphere from any single source of emission any air contaminants for a period or periods aggregating more than three minutes in any one hour which is:
- (a) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or
 - (b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection B.2(a) above.

- B.3 **Nuisance (Rule 303).** No pollutant emissions from any source at Greka shall create nuisance conditions. No operations shall endanger health, safety or comfort, nor shall they damage any property or business. *[Re: APCD Rule 303]*
- B.4 **PM Concentration - North Zone (Rule 304).** Greka shall not discharge into the atmosphere, from any source, particulate matter in excess of 0.3 gr./scf. *[Re: APCD Rule 304]*
- B.5 **Specific Contaminants (Rule 309).** Greka shall not discharge into the atmosphere from any single source sulfur compounds and combustion contaminants in excess of the applicable standards listed in Sections A and E Rule 309. *[Re: APCD Rule 309]*.
- B.6 **Sulfur Content of Fuels (Rule 311).** Greka shall not burn fuels with a sulfur content in excess of 796 ppmvd or 15 gr/100 scf (calculated as H₂S) for gaseous fuel. Compliance with this condition shall be based on daily (for H₂S) and annual (for TRS) measurements, of the fuel gas using APCD-approved methods. *[Re: APCD Rule 311]*
- B.7 **Organic Solvents (Rule 317).** Greka shall comply with the emission standards listed in Section B of Rule 317. Compliance with this condition shall be based on Greka's compliance with Condition D.14 of this permit.
- B.8 **Metal Surface Coating Thinner and Reducer (Rule 322).** The use of photochemically reactive solvents as thinners or reducers in metal surface coatings is prohibited. Compliance with this condition shall be based on Condition D.14 in this permit and facility inspections.
- B.9 **Architectural Coatings (Rule 323).** Greka shall comply with the coating ROC content and handling standards listed in Section D of Rule 323 as well as the Administrative requirements listed in Section F of Rule 323. Compliance with this condition shall be based on Greka's compliance with Condition D.14 of this permit and facility inspections.
- B.10 **Disposal and Evaporation of Solvents (Rule 324).** Greka shall not dispose through atmospheric evaporation of more than one and a half gallons of any photochemically reactive solvent per day. Compliance with this condition shall be based on Greka's compliance with Condition D.14 of this permit and facility inspections.
- B.11 **Adhesives and Sealants (Rule 353).** The permittee shall not use adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, or any other primers, unless the permittee complies with the following:
- (a) Such materials used are purchased or supplied by the manufacturer or suppliers in containers of 16 fluid ounces or less; or alternately
 - (b) When the permittee uses such materials from containers larger than 16 fluid ounces and the materials are not exempt by Rule 353, Section B.1, the total reactive organic compound emissions from the use of such material shall not exceed 200 pounds per year unless the substances used and the operational methods comply with Sections

D, E, F, G, and H of Rule 353. Compliance shall be demonstrated by recordkeeping in accordance with Section B.2 and/or Section O of Rule 353. *[Re: APCD Rule 353]*

B.12 Oil and Natural Gas Production MACT. Greka shall comply with the following General Recordkeeping ((40 CFR 63.10(b)(2)) MACT requirements:

- (a) Greka shall maintain records of the occurrence and duration of each startup, shutdown, or malfunction of operation;
- (b) Actions taken during periods of startup, shutdown, and malfunction when different from the procedures specified in Greka's startup, shutdown, and malfunction plan (SSMP);
- (c) All information necessary to demonstrate conformance with Greka's SSMP when all actions taken during periods of startup, shutdown, and malfunction are consistent with the procedures specified in such plan;
- (d) All required measurements needed to demonstrate compliance with a relevant standard, including all records with respect to applicability determination, and black oil documentation per 40 CFR 63.760;
- (e) Any information demonstrating whether a source is meeting the requirements for a waiver of record-keeping or reporting requirements under this condition.
- (f) Greka shall maintain records of SSM events indicating whether or not the SSMP was followed;
- (g) Greka shall submit a semi-annual startup, shutdown, and malfunction report as specified in 40 CFR 63.10.d.5. The report shall be due by July 30th and January 30th. *[Re: 40 CFR 63, Subpart HH]*

9.C Requirements and Equipment Specific Conditions

This section includes non generic federally-enforceable conditions, including emissions and operations limits. Monitoring, record keeping and reporting conditions are included in this section for each specific equipment group. This section may also contain other non-generic conditions.

Section 9.C Equipment Specific Conditions

Number	Title
C.1	Permitted IC Engines at Production Leases Subject to Emissions Control
C.2	Permitted IC Engines at Bell Lease Compressor Plant
C.3	Fugitive Hydrocarbon Emission Components
C.4	Recordkeeping
C.5	Compliance Verification Reports
C.6	Fuel Gas Sulfur and HHV Monitoring Plan
C.7	Sampling Provisions for Non-Operational Equipment/Activities

- C.1 **Permitted IC Engines at Bell Lease Compressor Plant.** The following equipment item listed in Table C.2-1 below is the only engine in this emissions unit category:

Table C.2-1 Compressor Plant IC Engines

APCD Device No.	Name
6466	Caterpillar G-342 Engine (225 bhp, S/N 12253)

- (a) Emission Limits. Mass emissions from the engine listed in Table C.2-1 above shall not exceed the limits specified for this engine listed in Table 5.2-7. In addition, emissions from this equipment item shall not exceed the emission concentration limits specified in condition 9.C.2.a.i below. Compliance with this condition will be assessed through compliance with operation limits, exhaust emissions source testing, and other conditions of this permit. The compliance procedures outlined in Section E.3 of Rule 333 shall be followed for Greka's use of the portable analyzer. [Re: APCD ATC 9610, 10133, 11003]
- (i) *Caterpillar Engine G-342.* Controlled emissions of NO_x, ROC and CO from the Caterpillar engine 6466) shall not exceed 0.3 g/bhp-hr (36 ppmvd at 15 percent oxygen), 0.15 g/bhp-hr (24 ppmvd at 15% O₂) and 0.50 g/bhp-hr (299 ppmvd at 15% O₂) respectively. Compliance shall be based on annual source testing according to Table 4.7-1 and quarterly inspections with a portable NO_x/CO analyzer. The compliance procedures outlined in Section E.3 of Rule 333 shall be followed for Greka's use of the portable analyzer.

(b) Operational Limits: The following operational limits apply to the IC engine listed in Table C.2-1:

- (i) *Fuel Gas Sulfur Limit*. The total sulfur content (calculated as H₂S at standard conditions, 60° F and 14.7 psia) of the gaseous fuel burned at the compressor plant shall not exceed 15 grains per 100 cubic feet (239 ppmv);
- (ii) *Heat Input Limits*. Greka shall comply with the following operating limits:
 - (1) The heat input (MMBtu - HHV basis) to the internal combustion engine listed in Table C.2-1 is restricted to the value listed in Table C.2-2.

Table C.2-2 Heat Input Limits for Compressor Plant IC Engines

IC Engine Make/Model	Serial #	APCD ID#	Operating Limits		Heat Input Limits	
			(hr/day)	(hr/yr)	(MMBtu/hr)	(MMBtu/yr)
Caterpillar G-342	12253	6466	24	8760	1.83	16,044

- (iii) *Engine Identification*. The engine shall have its Greka identification number permanently and legibly liquid welded or stamped into the engine block. The location of the identifying stamp shall be the same for each engine model and shall be readily accessible for inspection.
- (iv) *Reference List*. For each engine's unique Greka identification number, stamped into the engine block per Condition 9.C.2.b.iii, Greka shall maintain a reference list containing the make, model, serial number, rated maximum HP and the corresponding RPM.
- (v) *ERCs: Shift in Load*. To ensure that the NEI decrease and ERCs created by replacement of the old Clark HRA-8 compressor engine (old engine #1) remain permanent and enforceable, Greka shall not shift the load from the Caterpillar engine 6466 to any other IC engine. Notwithstanding any provision of APCD Rule 202, Greka shall not replace engine #6466 without first submitting an ATC application to the APCD for the replacement engine and an application to modify DOI #006. Any such replacement engine shall meet the criteria of having equivalent or lower potential emissions, stack emission concentrations and air/fuel ratio controllers. Furthermore, all natural gas compression at the South Cat Canyon stationary source shall be performed with engine/compressor units that ensure the emission reductions remain permanent and enforceable for the life of the project.
- (vi) *Air/Fuel Ratio Controller Set-Points*. The set-points for the Caterpillar G-342 IC engine's Air/Fuel Ratio Controllers shall be maintained throughout the year at the value determined via the annual (or most recent) compliance source test.

- (vii) *Catalyst Replacement.* Greka may replace the catalyst bed of the Caterpillar engine with an identical catalyst bed as needed to maintain the effectiveness of the control efficiencies.
 - (viii) *Oxygen Sensor Replacement.* Greka shall replace the oxygen sensors no later than 2,000 hours of engine operation for each IC engine.
 - (ix) Only the Caterpillar G-342 (APCD #6466) may operate at the Bell Lease Compressor Plant unless an Authority to Construct and/or a Permit to Operate is obtained first.
- (c) Monitoring: The following source testing and periodic monitoring conditions apply Bell Lease Compressor Plant IC engine:
- (i) *Fuel Meters.* The Caterpillar IC engine listed in Table C.2-1 shall be equipped with a fuel meter (totalizer) to measure the total cubic feet (scf) delivered to the engine. The fuel meter shall be accurate to within five percent (5%) of the full scale reading. All fuel meters/gauges shall be calibrated in accordance with the fuel meters manufacturer's procedures. The calibrations shall be performed as specified by the fuel meter manufacturer, but no later than the date of the next required emissions source test.
 - (ii) *Fuel Gas Sulfur Data.* Greka shall measure the total sulfur content of the gaseous fuel annually in accordance with ASTM-D1072 and an APCD approved *Fuel Gas Sulfur Monitoring Plan*. Greka shall measure the hydrogen sulfide (H₂S) content of the gaseous fuel monthly via sorbent tube method and an APCD approved *Fuel Gas Sulfur and HHV Monitoring Plan*.
 - (iii) *Fuel Gas High Heating Value.* Greka shall measure the higher heating value of the fuel gas on a quarterly basis using APCD approved methods and per an APCD approved *Fuel Gas Sulfur and HHV Monitoring Plan*.
 - (iv) *Hour Meters.* The Caterpillar IC engine listed in Table C.2-1 of this permit shall be equipped with a totalizing non-resettable hour meter. The hour meter shall be operational at all times the engine is operated.
 - (v) *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan.* Greka shall abide by the procedures identified in the APCD approved *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan (April 2004)*. The Plan, and any subsequent District approved revisions, is incorporated by reference as an enforceable part of this permit.
 - (vi) *Rule 333 Inspection and Maintenance Plan.* Greka shall abide by the procedures identified in the APCD approved *Rule 333 Inspection and Maintenance Plan (November 2009)*. The Plan, and any subsequent District approved revisions, is incorporated by reference as an enforceable part of this permit.

(vii) *Source Testing*. For engine ID #6466 Greka shall perform source testing of air emissions and the parameters listed in Table 4.7-1 of this permit. Source testing of the Caterpillar G-342 shall be performed on an annual schedule, using May as the anniversary date. The source testing provisions listed below shall apply.

- (1) Greka shall conduct source testing of air emissions and process parameters listed in Table 4.7-1 of this permit. More frequent source testing may be required if the equipment does not comply with permitted limitations or if other compliance problems, as determined by the APCD, occur. The engine shall be loaded to the maximum safe load obtainable.
- (2) Greka shall submit a written source test plan to the APCD for approval at least thirty (30) calendar days prior to initiation of each source test. The source test plan shall be prepared consistent with the APCD's *Source Test Procedures Manual* (revised May 1990 and any subsequent revisions). Greka shall obtain written APCD approval of the source test plan prior to commencement of source testing. The APCD shall be notified at least ten (10) calendar days prior to the start of source testing activity to arrange for a mutually agreeable source test date when APCD personnel may observe the test.
- (3) Source test results shall be submitted to the APCD within forty-five (45) calendar days following the date of source test completion and shall be consistent with the requirements approved within the source test plan. Source test results shall demonstrate compliance with Rule 333, the mass emission rates in Section 5, and applicable permit conditions. Greka, as provided for by APCD Rule 210, shall pay all APCD costs associated with the review and approval of all plans and reports and the witnessing of tests. The APCD may, at its discretion, extend the timelines indicated above for good cause, upon receiving a written request from Greka at least 3 days in advance of the applicable deadline.
- (4) A source test for an item of equipment shall be performed on the scheduled day of testing (the test day mutually agreed to) unless circumstances beyond the control of the operator prevent completion of the test on the scheduled day. Such circumstances include mechanical malfunction of the equipment to be tested, malfunction of the source test equipment, delays in source test contractor arrival and/or set-up, or unsafe conditions on site. Except in cases of an emergency, the operator shall seek and obtain APCD approval before deferring or discontinuing a scheduled test, or performing maintenance on the equipment item on the scheduled test day. Once the sample probe has been inserted into the exhaust stream of the equipment unit to be tested (or extraction of the sample has begun), the test shall proceed in accordance with the approved source test plan. In no case shall a test run be aborted except in the case of an emergency or unless approval is first obtained from the APCD. If the test cannot be completed on the scheduled day, then the test shall be rescheduled for another time with prior authorization by the APCD.

Failing to perform or complete the source test of an equipment item on the scheduled test day without a valid reason and without APCD's prior authorization, except in the case of an emergency, shall constitute a violation of this permit. If a test is postponed due to an emergency, written documentation of the emergency event shall be submitted to the APCD by the close of the business day following the scheduled test day.

- (d) Recordkeeping: Greka shall keep the required logs for the engines listed in Table C.2-1, which demonstrate compliance with emission limits, operation limits and monitoring requirements for these engines. All records and logs, required under any applicable federal or APCD requirements for the engines, shall be maintained for a minimum of five calendar years from the date of the information collection and log entry. These shall be readily accessible and be made available to the APCD upon request. Written information (logs) shall include:
- (i) *Fuel Gas Use*. The total amount of fuel gas combusted in the unit listed in Table C.2-1 shall be recorded on a weekly, monthly, quarterly, and annual basis in units of standard cubic feet and million Btus (x.xxx format).
 - (ii) The hours of operation for the Caterpillar engine identified in Table C.2-1. The log shall detail the number of operating hours on each day the engine is operated and the cumulative total monthly and annual hours.
 - (iii) *Sulfur Content*. The monthly measured hydrogen sulfide content and the annually measured total sulfur content, both in units of ppmvd, of the gaseous fuel burned on the lease from each permitted combustion unit.
 - (iv) *High Heating Value*. The quarterly high heating value and specific gravity of the fuel gas.
 - (v) IC engine calibration and maintenance logs, including quarterly inspection results, consistent with the requirements of Rule 333.H.
 - (vi) Greka shall maintain a log of all significant activities involving the catalytic converter and electronic air/fuel ratio controller. This log shall include the following: catalyst replacements, A/F ratio oxygen sensor replacements, A/F ratio controller replacements, and catalyst cleanings.
 - (vii) Greka shall maintain records of the air/fuel ratio controller millivolt setpoints recorded during each source test.
- (e) Reporting: On a semi-annual basis, a report detailing the previous six months activities shall be provided to the APCD. The report shall list all the data required by the Semi-Annual Monitoring/Compliance Verification Reports condition listed below. [Ref: APCD ATC 9975, APCD Rules 333, 1303 and 40 CFR 70.6]

- C.2 **Fugitive Hydrocarbon Emission Components.** The following equipment items located at the Bell Lease Compressor Plant (only) listed in Table C.3-1 are included in this emission unit category:

Table C.3-1 Fugitive Hydrocarbon Emission Components

ID #	Name
	<i>Gas/Light Liquid Service Components</i>
100352	Valves - Bellows Seal
100352	Valves - Accessible/Inaccessible
100352	Valves – Unsafe
100352	Valves - LEV Accessible/Inaccessible
100352	Valves - LEV Unsafe
100353	Flanges/Connections - Accessible/Inaccessible
100353	Flanges/Connections – Unsafe
100355	Compressor Seals - To Atm
100354	Compressor Seals - To VRU
100355	Relief Valves - To Atm
100355	Relief Valves - To VRU
100355	Pump Seals – Tandem
100355	Pump Seals – Single
100355	Exempt

- (a) Emission Limits: Mass emissions from the gas/light liquid service (sub-total) components listed above in Table C.3-1 shall not exceed the specified emissions limits. Compliance with this condition shall be based on actual component-leak-path counts as documented through the monitoring, record keeping and reporting conditions in this permit.
- (b) Operational Limits: Operation of the equipment listed in this section shall conform to the requirements listed in APCD Rule 331.D and E. Compliance with these limits shall be assessed through compliance with the monitoring, record keeping and reporting conditions in this permit. In addition Greka shall meet the following requirements:
 - (i) *Rule 331 I&M Program.* The APCD-approved I&M Plan for the ICE Facility shall be implemented for the life of the project. The Plan, and any subsequent APCD approved revisions, is incorporated by reference as an enforceable part of this permit.
 - (ii) *Rule 331 Exemption Request.* If Greka wishes to obtain the Rule 331 B.2.c exemption from the MRR requirements of Rule 331, then Greka shall submit an exemption request to the APCD which shall include a current inventory of all 1/2" or smaller stainless steel tube fittings and a written statement certifying under penalty of perjury that all one-half inch and smaller stainless steel tube fittings have been inspected in accordance with the requirements of Rule 331 Section H.1 and found to be leak-free.

- (iii) *Leak-Path Count.* The total leak-path component count listed in Greka's most recent I&M component leak-path inventory shall not exceed the total leak-path line item sub-totals listed in this permit by more than five percent. This five percent range is to allow for minor differences due to component counting methods and does not constitute allowable emissions growth due to the addition of new equipment.
- (iv) *Venting.* All routine venting of hydrocarbons shall be routed to either the sales compressor, flare header, injection well or other APCD-approved control device.
- (c) Monitoring: The equipment listed in this section are subject to all the monitoring requirements listed in APCD Rule 331.F. The test methods in Rule 331.H shall be used, when applicable.
- (d) Recordkeeping: All inspection and repair records shall be retained at the source for a minimum of five years. The equipment listed in this section are subject to all the recordkeeping requirements listed in APCD Rule 331.G. In addition, Greka shall record in a log the following:
 - (i) a record of leaking components found (including name, location, type of component, date of leak detection, the ppmv reading, date of repair attempt, method of detection, date of re-inspection and ppmv reading after leak is repaired);
 - (ii) a record of the total components inspected and the total number and percentage found leaking by component type;
 - (iii) a record of leaks from critical components;
 - (iv) a record of leaks from components that incur five repair actions within a continuous 12-month period; and,
 - (v) a record of component repair actions including dates of component re-inspections.
- (e) Reporting: The equipment listed in this section are subject to all the reporting requirements listed in APCD Rule 331.G. On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the APCD. The report shall list all the data required by the Semi-Annual Monitoring/Compliance Verification Reports condition listed below. *[Re: APCD ATC 9975, APCD Rule 331, 1303, 40 CFR 70.6]*

C.3 Recordkeeping. All records and inspection reports/logs required by this permit and any applicable District, state or federal rule or regulation shall be maintained for a minimum of five calendar years from the date of information collection and log entry at the lease. These records or logs shall be readily accessible and be made available to the District upon request. *[Re: APCD Rule 1303, 40 CFR 70.6]*

C.4 Semi-Annual Monitoring/Compliance Verification Reports. Twice a year, Greka shall submit a compliance verification report to the APCD. Each report shall document

compliance with all permit, rule or other statutory requirements during the prior two calendar quarters. The first report shall cover calendar quarters 1 and 2 (January through June) and the second report shall cover calendar quarters 3 and 4 (July through December). The reports shall be submitted by March 1st and September 1st each year. Each report shall contain information necessary to verify compliance with the emission limits and other requirements of this permit and shall document compliance separately for each calendar quarter. These reports shall be in a format approved by the APCD. Compliance with all limitations shall be documented in the submittals. All logs and other basic source data not included in the report shall be made available to the APCD upon request. The second report shall also include an annual report for the prior four quarters. Pursuant to Rule 212, a completed *APCD Annual Emissions Inventory* questionnaire should be included in the annual report or submitted electronically via the APCD website. Greka may use the Compliance Verification Report in lieu of the Emissions Inventory questionnaire if the format of the CVR is acceptable to the APCD's Emissions Inventory Group and if Greka submits a statement signed by a responsible official stating that the information and calculations of emissions presented in the CVR are accurate and complete to best knowledge of the individual certifying the statement. The report shall include the following information:

- (a) *Permitted Internal Combustion Engines at the Bell Lease Compressor Plant (Caterpillar ID 3831-02):*
 - (i) The monthly measured sulfur concentration of the fuel gas calculated as H₂S.
 - (ii) The annually measured total sulfur content of fuel gas consumed at each combustion unit (*each annual data will suffice for both reports*).
 - (iii) The quarterly measured high heating value (Btu/scf).
 - (iv) The total volume of gaseous fuel combusted in each combustion unit, on a daily, monthly, quarterly, and annual basis in units of standard cubic feet and million BTUs.
 - (v) The number of hours the Caterpillar IC engine operated each month.
 - (vi) The Caterpillar IC engine calibration and maintenance logs, including quarterly inspection results, consistent with the requirements of Rule 333.H.
- (b) *Fugitive Hydrocarbon Emission Components:*
 - (i) A summary of the total components inspected.
 - (ii) A summary of the total number and percentage found leaking by component type.
 - (iii) A record of leaks from critical components.
 - (iv) A record of leaks from components that incur five repair actions within a continuous 12-month period.

- (v) A record of component repair actions including dates of component re-inspections.
- (vi) An updated FHC I&M inventory due to change in component lists or diagrams.
- (vii) A list of components installed as BACT under APCD Rule 331 as approved by the APCD.
- (c) *General Reporting Requirements:*
 - (i) A summary of each and every occurrence of non-compliance with the provisions of this permit, APCD rules, and any other applicable air quality requirement.
 - (ii) On an annual basis, the ROC and/or NO_x emissions from all APCD permit exempt activities.

C.5 **Fuel Gas Sulfur and HHV Monitoring Plan.** Greka shall abide by an APCD approved *Fuel Gas Sulfur and HHV Monitoring Plan*. The plan includes the following elements:

- (a) *Unit Description:* A brief description of the combustion units permitted to operate using fuel gas in the Greka South Cat Canyon stationary source, including the APCD ID#, and the purpose for operation in the source.
- (b) *Fuel Monitoring Devices:* A description of the fuel gas sulfur and HHV monitoring devices in place on each permitted unit. A diagram identifying the fuel gas lines by lease with the sampling location for each permitted combustion unit.
- (c) *Fuel Sampling Procedures:* A description of the procedures in place for collecting fuel gas samples for total reduced sulfur (TRS) and H₂S concentration, and the High Heating Value (HHV) of the fuel.
- (d) *Recordkeeping:* Monthly and annual records shall be kept onsite for a minimum of five (5) years and will be made available to the APCD upon request.
 - (i) The monthly records of fuel gas sulfur content and HHV will be submitted in the semi-annual and annual compliance verification report (CVR). The CVR will include the results of total reduced sulfur concentration as measured and recorded annually, the results of HHV as measured as recorded quarterly, and the results of H₂S concentration as measured and recorded monthly for each permitted combustion unit.

Greka may submit a revision to the *Fuel Gas Sulfur and HHV Monitoring Plan* at any time to address sampling locations. Revisions to this plan must be approved by the APCD prior to implementing any modifications to sampling frequency, location, or sampling methodology.

C.6 **Sampling Provisions for Non-Operational Equipment/Activities.** Greka shall complete all sampling/analysis required in section 9.C or 9.D conditions at the designated frequencies (e.g., daily, weekly, monthly, quarterly, and/or annual) except under circumstances when equipment subject to sampling is non-operational, as described below:

- (a) *Equipment currently in extended shut-down mode.* For any permitted equipment that has been shut-down for twelve or more consecutive months and whose operation is not prevented by conditions contained within this permit, Greka shall not be required to complete the required sampling and analysis while the equipment remains shut-down. Within 30 days of issuance of this permit, Greka shall submit a revised written list of all equipment/activities (by facility permit) subject to sampling that have been shut-down for at least 12 consecutive months, along with monthly records documenting the non-operational status of the equipment. Prior to startup of a permitted equipment unit that has been shutdown for twelve (12) or more consecutive months, Greka shall submit a written notification of the projected startup date. Upon start-up, Greka shall resume the required sampling and analysis at the frequency designated in this permit.
- (b) *Planned equipment shut-downs.* For planned shut-downs of permitted equipment, Greka shall complete the sampling/analyses required before the unit is shutdown. For planned shut-downs of equipment/activities of duration less than the sampling frequency defined in this permit for that unit, Greka must complete the required sampling. If the actual shut-down duration is for a period greater than the sampling frequency defined in this permit for that unit, then Greka does not have to complete the sampling for the unit while shut-down. Upon equipment start-up, Greka shall resume the required sampling and analysis at the frequency designated in this permit. Prior to any planned shut-downs of units subject to sampling, Greka shall submit a written shutdown notification to the APCD which identifies the unit(s) to be shutdown and the scheduled period (dates) of the shutdown.

9.D APCD-Only Conditions

The following section lists permit conditions that are not federally enforceable (i.e., not enforceable by the USEPA or the public). However, these conditions are enforceable by the APCD and the State of California. These conditions have been determined as being necessary to ensure that operation of the facility complies with all applicable local and state air quality rules, regulations and laws. Failure to comply with any of these conditions shall be a violation of APCD Rule 206, this permit, as well as any applicable section of the California Health & Safety Code.

Section 9.D APCD-Only Conditions

Number	Title
D.1	Consistency with Analysis
D.2	Equipment Maintenance
D.3	Compliance
D.4	Severability
D.5	Conflict Between Permits
D.6	Access to Records and Facilities
D.7	Grounds for Revocation
D.8	Odorous Organic Sulfides (Rule 310)
D.9	Mass Emission Limitations
D.10	Process Monitoring Systems - Operation and Maintenance
D.11	Process Stream Sampling and Analysis
D.12	Permitted IC Engines at Production Leases <u>Not</u> Subject to Emission Controls
D.13	Solvent Usage
D.14	Permitted Equipment
D.15	Annual Compliance Reporting

- D.1 **Consistency with Analysis.** Operation under this permit shall be conducted consistent with all data, specifications and assumptions included with the application and supplements thereof (as documented in the APCD's project file) and the APCD's analyses under which this permit is issued as documented in the Permit Analyses prepared for and issued with the permit.
- D.2 **Equipment Maintenance.** All equipment permitted herein shall be properly maintained and kept in good working condition in accordance with the equipment manufacturer specifications at all times.

- D.3 **Compliance.** Nothing contained within this permit shall be construed as allowing the violation of any local, state, or federal rules, regulations, air quality standards or increments.
- D.4 **Severability.** In the event that any condition herein is determined to be invalid, all other conditions shall remain in force. *[Re: APCD Rules 103 and 1303.D.1]*
- D.5 **Conflict Between Permits.** The requirements or limits that are more protective of air quality shall apply if any conflict arises between the requirements and limits of this permit and any other permitting actions associated with the equipment permitted herein.
- D.6 **Access to Records and Facilities.** As to any condition that requires for its effective enforcement the inspection of records or facilities by the APCD or its agents, the permittee shall make such records available or provide access to such facilities upon notice from the APCD. Access shall mean access consistent with California Health and Safety Code Section 41510 and Clean Air Act Section 114A.
- D.7 **Grounds for Revocation.** Failure to abide by and faithfully comply with this permit or any Rule, Order, or Regulation may constitute grounds for revocation pursuant to California Health & Safety Code Section 42307 *et seq.*
- D.8 **Odorous Organic Sulfides (Rule 310).** Greka shall not discharge into the atmosphere H₂S and organic sulfides that result in a ground level impact beyond the Greka property boundary in excess of either 0.06 ppmv averaged over 3 minutes and 0.03 ppmv averaged over one hour. *[Re: APCD Rule 310].*
- D.9 **Mass Emission Limitations:** Mass emissions for each equipment item associated with the ICE facility shall not exceed the values listed in Table 5.2-5 through Table 5.2-8. *[Re: APCD PTO 9036, ATC's 9610, 10133, 10421, and 11003]*
- D.10 **Process Monitoring Systems - Operation and Maintenance.** All facility process monitoring devices listed in Section 4.6.2 of this permit shall be properly operated and maintained according to manufacturer recommended specifications. Greka shall abide by the procedures identified in the APCD approved *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan* and the *Rule 333 Inspection and Maintenance Plan*. These Plans detail the manufacturer recommended maintenance and calibration schedules for fuel meters and IC engines. Where manufacturer guidance is not available, the recommendations of comparable equipment manufacturers and good engineering judgment will be used. Copies of such recommended schedules shall be kept on site.
- D.11 **Process Stream Sampling and Analysis.** Greka shall sample and analyze the process streams listed in Section 0 of this permit according to the methods and frequency detailed in that section. All process stream samples shall be taken according to APCD approved ASTM methods and must follow traceable chain of custody procedures. Compliance with this condition shall be assessed through compliance with the monitoring, record-keeping and reporting (MRR) conditions listed in this permit.

- D.12 **Derated Internal Combustion Engines:** The orifice plate on each derated engine (ID #4497, 4510, 4499 and 4500) shall not have an orifice greater than the diameter listed in the Table 5.1-1. The orifice plate shall be made from 10 gauge mild steel stock with a sharp edge circular orifice. The orifice plate shall be located between the carburetor and the intake manifold. The orifice plate shall be in place at all times the engine operates. PXP shall inspect one orifice plate each calendar quarter, and all four should be inspected each calendar year. In addition, PXP shall assist District personnel in the measurement and/or inspection of an orifice plate upon request. PXP shall replace an orifice plate within thirty (30) calendar days after any inspection if it shows corrosion or degradation that enlarges the specified hole diameter, or if there is any other indication the plate is not properly restricting fuel flow to the engine. The APCD shall be notified in writing each time an orifice plate is replaced. This notification shall be received by the APCD no more than 10-days after completion of the orifice plate inspection/replacement work.
- D.13 **Permitted IC Engines at Production Leases Not Subject to Emission Controls.** These consist of fifty- three (53) IC engines located at the South Cat Canyon stationary source and driving oil or produced water pumps and injector pumps. The equipment items are listed below in
- (a) Operational Limits. The following operational limits shall not be exceeded for the 53 IC engines
 - (i) Maximum hourly heat input (MMBtu/hour) to the internal combustion engines listed in this permit is restricted to the values listed in the “Hour (MMBtu/hr)” column of Table 10.2-1.
 - (ii) Maximum annual heat input (MMBtu/year) to the internal combustion engines listed in this permit is restricted to the values listed in the “Annual (MMBtu/yr)” column of Table 10.2-1.
 - (iii) Engines shall be fired on gaseous fuels only; a common fuel gas line shall supply fuel to all uncontrolled IC engines listed in Table 10.2-1.
 - (iv) *Gaseous Fuel Sulfur Limit.* The total sulfur content (calculated as H₂S at standard conditions, 60° F and 14.7 psia) of the gaseous fuel burned by the engines listed in Table 10.2-1 shall not exceed 50 grains per 100 cubic feet (796 ppmvd).
 - (v) *Derated Internal Combustion Engines.* The orifice plate on each derated engine (ID #4497, 4510, 4499 and 4500) shall not have an orifice greater than the diameter listed in the Table 5.1-1. The orifice plate shall be made from 10 gauge mild steel stock with a sharp edge circular orifice. The orifice plate shall be located between the carburetor and the intake manifold. The orifice plate shall be in place at all times the engine operates. PXP shall inspect one orifice plate each calendar quarter, and all four should be inspected each calendar year. In addition, PXP shall assist District personnel in the measurement and/or inspection of an orifice plate upon request. PXP shall replace an orifice plate within thirty (30) calendar days after any inspection if

it shows corrosion or degradation that enlarges the specified hole diameter, or if there is any other indication the plate is not properly restricting fuel flow to the engine. The APCD shall be notified in writing each time an orifice plate is replaced. This notification shall be received by the APCD no more than 10-days after completion of the orifice plate inspection/replacement work..

- (vi) *Engine Identification.* Each engine shall have its Greka identification number permanently and legibly liquid welded or stamped into the engine block. The location of the identifying stamp shall be the same for each engine model and shall be readily accessible for inspection.
- (b) Monitoring: The following monitoring conditions apply to the 53 IC engines:
- (i) *Fuel Meters.* The IC engines listed in Table 10.2-1 shall be equipped with fuel meters (totalizer) to measure the total cubic feet (scf) delivered to the engine. The fuel meters shall be accurate to within five percent (5%) of the full scale reading. The fuel meter/gauge shall be calibrated in accordance with the fuel meters manufacturer's procedures. The calibrations shall be performed as specified by the fuel meter manufacturer. In lieu of equipping each engine listed in Table 10.2-1 with a fuel meter, Greka may propose an alternative fuel metering scheme for APCD review and approval. Any alternative must be clearly addressed in the revised *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan* to be submitted and implemented by Greka as required in condition 9.D.12.b.iii.
 - (ii) *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan.* Greka shall abide by the procedures identified in the APCD approved *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan*. The Plan, and any subsequent District approved revisions, is incorporated by reference as an enforceable part of this permit.
 - (iii) *Fuel Sulfur Monitoring.* The permittee shall measure the total sulfur content (as H₂S) of the gaseous fuel *annually* in accordance with ASTM-D1072 or an APCD approved equivalent method. In addition, monthly detector tube samples for H₂S ppmv are required. Records shall be kept on site and made available for inspection by the APCD staff upon request.
 - (iv) *Fuel Heating Value.* The permittee shall measure the heating value of the gaseous fuel (Btu/scf) on an *annual* basis.
- (c) Recordkeeping: For the 53 IC engines listed in Table 10.2-1, the following records (electronic or hard copy) shall be maintained by the permittee and shall be made available to the District upon request:
- (i) Fuel use per condition D.13.b.i of this permit. Monthly records shall be generated no later than 90 days after the close of the subject month.
 - (ii) Written engine operation log consistent with the requirements of Rule 333.H.
 - (iii) Written documentation of the gaseous fuel sulfur content per condition D.13.b.ii.

- (iv) Written documentation of the heating value of the gaseous fuel per condition D.13.b.iii.
- (v) If an operators tag number is used in lieu of an engine identification plate, written documentation which references the operators unique engine ID number to a list containing the make, model, rated maximum horsepower and the corresponding RPM.
- (d) Reporting: On an annual basis, a report detailing the previous year's activities shall be provided to the APCD. The report shall list all the data required by the Annual Monitoring/Compliance Verification Reports condition in Section D of this permit.

D.14 External Combustion Units - Permits Required.

- 1) An ATC/PTO permit shall be obtained prior to installation of any grouping of Rule 360 applicable boilers or hot water heaters whose combined system design heat input rating exceeds 2.000 MMBtu/hr.
- 2) An ATC permit shall be obtained prior to installation, replacement, or modification of any existing Rule 361 applicable boiler or water heater rated over 2.000 MMBtu/hr.
- 3) An ATC shall be obtained for any size boiler or water heater if the unit is not fired on natural gas or propane.

D.15 Solvent Usage.

- (a) Emission Limits: Mass emissions for solvent usage associated with the ICE facility shall not exceed the values listed in Table 5.5-1 of this permit.
- (b) Operational Limits: Use of solvents for cleaning/degreasing shall conform to the requirements of APCD Rules 317, 322, 323 and 324. Compliance with these rules shall be assessed through compliance with the monitoring, recordkeeping and reporting conditions in this permit and facility inspections.
 - (i) *Containers*. Vessels or containers used for storing materials containing organic solvents shall be kept closed unless adding to or removing material from the vessel or container.
 - (ii) *Materials*. All materials that have been soaked with cleanup solvents shall be stored, when not in use, in closed containers that are equipped with tight seals.
 - (iii) *Solvent Leaks*. Solvent leaks shall be minimized to the maximum extent feasible or the solvent shall be removed to a sealed container and the equipment taken out of service until repaired. A solvent leak is defined as either the flow of three liquid drops per minute or a discernable continuous flow of solvent.
 - (iv) *Reclamation Plan*. Greka may submit a Plan to the APCD for the disposal of any reclaimed solvent. If the Plan is approved by the APCD, all solvent disposed of pursuant to the Plan will not be assumed to have evaporated as emissions into the air and, therefore, will not be counted as emissions from the source. Greka shall obtain APCD approval of the procedures used for such a disposal Plan. The Plan shall detail all procedures used for collecting, storing and transporting the

reclaimed solvent. Further, the ultimate fate of these reclaimed solvents must be stated in the Plan.

- (c) Monitoring: none.
- (d) Recordkeeping: Greka shall record in a log the following on a monthly basis for each solvent used: amount used; the percentage of ROC by weight (as applied); the solvent density; the amount of solvent reclaimed for APCD-approved disposal; whether the solvent is photochemically reactive; and, the resulting emissions to the atmosphere in units of pounds per month and pounds per day. Product sheets (MSDS or equivalent) detailing the constituents of all solvents shall be maintained in a manner readily accessible to APCD inspection.
- (e) Reporting: On an annual basis, a report detailing the previous twelve month's activities shall be provided to the APCD. The report shall list all the data required by the Annual Compliance Report condition.

D.16 **Permitted Equipment.** Only those equipment items listed in Attachment 10.5 are covered by the requirements of this permit and District Rule 201.E.2.

[Re: APCD Rule 201]

D.17 **Annual Compliance Reporting.** In addition to its federally required semi-annual reporting, Greka shall also submit an annual report to the APCD, by March 1st of the following year containing the information listed below. These reports shall be in a format approved by the APCD. All logs and other basic source data not included in the report shall be available to the APCD upon request. Except where noted, the annual compliance report shall include monthly summaries of the following information:

- (a) *Permitted Internal Combustion Engines at the Leases - Not Subject to Controls:*
 - (ii) The volume of fuel used in units of standard cubic feet (scf) and million Btu (MMBtu) totaled for each month, quarter, and year.
 - (iii) The gross heating value (HHV) of the gaseous fuel (Btu/scf) measured quarterly.
 - (iv) Total sulfur content (as H₂S) of the gaseous fuel measured annually.
- (b) *Solvent Usage*
 - (i) The volume (in gallons) of each non-photo-chemically reactive solvent used each month;
 - (ii) The density of each such solvent and the percentage of ROC by weight in each solvent;
 - (iii) The total weight (in pounds) of all "photo-chemically reactive" (per APCD Rule 102.FF) solvents used each month, and the number of days each month these were used;

- (iv) The volume (in gallons) of surface coating used each month;
- (v) The percentage of ROC by weight of the surface coating used.
- (c) *Adhesives and Sealants*
 - (i) All records of adhesives and sealants used in the facility including their ROC content, unless all such adhesives or sealants were contained in containers less than 16 ounces in size or all such materials were exempt from Rule 353 requirements pursuant to Rule 353.B.1.
- (d) *Mass Emissions*
 - (i) The annual emissions (TPY) from each permitted emissions unit for each criteria pollutant
 - (ii) The annual emissions (TPY) from each exempt emissions unit for each criteria pollutant
 - (iii) The annual emissions (TPY) totaled for each criteria pollutant.
- (e) *General Reporting Requirements*
 - (i) A summary of each use of CARB Certified equipment used at the facility. List the type of equipment used, CARB Registration Number, first date of use and duration of use and an estimate of the emissions generated.
 - (ii) A copy of the Rule 202 De Minimis Log for the stationary source.

AIR POLLUTION CONTROL OFFICER

February 2010

Date

NOTES:

- (a) This permit supersedes all previous “APCD-only” Permits-to-Operate issued for ICE Facility.
- (b) Permit Reevaluation Due Date: February 2013

10. Attachments

- 10.1 Emission Calculation Documentation**
- 10.2 Emission Calculation Spreadsheets**
- 10.3 Fee Calculations**
- 10.4 IDS Database Emission Tables**
- 10.5 Equipment List**

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10.1 Emission Calculation Documentation

This attachment contains all relevant emission calculation documentation used for the emission tables in Section 5. Refer to Section 4 for the general equations. The letters A-C refer to Tables 5.2-1, 5.2-2, and 5.2-3.

Reference A – Uncontrolled Internal Combustion Engines

See Attachment 10.2 for equipment operating characteristics of the uncontrolled ICE's.

Reference B – Controlled Internal Combustion Engines

- The maximum operating schedule is in units of hours
- The fuel default characteristics are:
 - HHV = 900 Btu/scf, for the three NSCR-controlled IC engines at the leases
 - HHV = 1100 Btu/scf, for the NSCR-controlled Compressor Plant IC engine
 - Fuel S = 239 ppmvd for all equipment
- BSFC (Caterpillar G-342, ID # 3831-002) = 8,140 Btu/hp-hr (based on HHV)
- Emission factor units (lb/MMBtu) are based on HHV.
- Emission factors for equipment ID # 3831-002 were obtained from the IC engine manufacturers; these are listed in ATC 9610 and 10133, also in Section 4 and 9.C of this permit.

The manufacturers provided the emission factors in units of g/hp-hr. The conversion of these numbers to the units of lb/MMBtu or ppmvd are performed, as follows:

Assumptions:

- @ 15% exhaust oxygen (dry basis)
- standard conditions (1.0 atm, 60 F)

Equation 1 g/bhp-hr to ppmv

$$\begin{aligned} ppmv_i &= SCF_i / MMSCF_{exhaust} \\ ppmv_i &= (g/bhp-hr) * (BSFC^{-1}) * (lb_i/454g) * (Fuel "F" factor @ 0\% O_2)^{-1} \\ &* (10^6 Btu/MMBtu) * (MW_i^{-1}) * (379 SCF_i/lb-mole) * (10^6/MM) * (XSA) \end{aligned}$$

Where:

BSFC⁻¹ [bhp-hr/Btu]

{Fuel "F" factor @ 0% O₂}⁻¹ [MMBtu/Scf_{exhaust}]

XSA = [20.9-15.0]/[20.9-0.0]

MW_i⁻¹ [lb-mole/lb_i]

-- Or --

Equation 2 g/bhp-hr to ppmv (K_{Fg})

$$ppmv_i = (g/bhp - hr) * BSFC^{-1} * K_{Fg}$$

$$K_{Fg} = (lb_i/454g) * (Fuel" F" factor @ 0\% O_2)^{-1} * (10^6 Btu/MMBtu) * (MW_i^{-1}) * (379SCF_i/lb - mole) * (10^6/MM) * (XSA)$$

Equation 3 lb/MMBTU to ppmv

$$ppmv_i = SCF_i / MMSCF_{exhaust}$$

$$ppmv_i = (lb_i/MMBtu) * (Fuel" F" factor @ 0\% O_2)^{-1} * (10^6 Btu/MMBtu) * (MW_i^{-1}) * (379SCF_i/lb - mole) * (10^6/MM) * (XSA)$$

-- Or --

Equation 4 lb/MMBTU to ppmv (K_{Flb})

$$ppmv_i = (lb_i/MMBtu) * BSFC^{-1} * K_{Flb}$$

$$K_{Flb} = (Fuel" F" factor @ 0\% O_2)^{-1} * (MW_i^{-1}) * (379SCF_i/lb - mole) * (10^6/MM) * (XSA)$$

Acronym Description and Reference used in Equations 1 through 4:

F = 40 CFR, §60.45.(4), 8608 scf/MMBtu @ 0% excess exhaust oxygen, dry basis; corrected to 60 F from 68 F.

MW = Average molecular weight of exhaust pollutant specie(s), lb_i/lb-mole

BSFC = ICE's brake specific fuel consumption, fuel HHV basis.

XSA = Excess air correction factor from 0% to 15% exhaust oxygen {dimensionless constant @ 0.282}.

The following default data were used in the conversion calculation process:

Table - 1 Average Exhaust Pollutant Molecular Weights

Pollutant	Molecular Weight (Lb _i /lb-mole)
NO _x as NO ₂	46.01
CO	28.01
ROC	41.31

CARB Profile # 719 for NG fired IC engines

Table - 2 Calculated K_{nglb} & K_{ngg}

	NO _x	ROC	CO
K_{nglb}	269.9	300.6	443.4
K_{ngg}	594,400	662,200	976,599

SO₂ emission limits (factors) are based on mass balance equation, based on fuel S. Thus, for gas-fired IC engines:

Equation 5 SO₂ Emission Limits Mass Balance Equation

$$SO_2(lb/MMBtu) = (0.169lbSO_2/scfH_2S) * (1/HHV) * (ppmvdSinf uel)$$

PM emission limits are based on USEPA, AP-42, Table 3.2.4 (gas-fired ICE). Thus, for gas-fired ICEs:

$$PM(lb/MMBtu) = (0.009lb/MMBtu)$$

PM₁₀: PM ratio = 1.00 (gas-fired); based on CARB data (Re: *Particulate Matter Non-attainment Plan Submittal, ARB Guidance, 1991*)

Reference C - Fugitive Components (Valves, fittings etc., at the wellheads)

- The maximum operating schedule is in units of hours;
- All safe to monitor components are credited with an 80 percent control efficiency. Unsafe to monitor components (as defined in Rule 331), none here, are considered uncontrolled.
- The ‘component leak path’ term used here differs from the Rule 331 definition of a component. A typical leak path count for a valve would be equal to 4 (one valve stem, a bonnet connection and two flanges).
- Leak path counts are provided by the applicant. The count has been verified to be accurate within 5 percent of the APCD’s count based on site checks and process/instrumentation diagram review.
- APCD Policy and Procedure 6100.061.1998 (Determination of Fugitive Hydrocarbon Emissions at Oil and Gas Facilities Through the Use of Facility Component Counts – Modified for Revised ROC Definition) is used as the basis for implementing the Component-Leakpath (CLP) methodology. (see Attachment 10.2)

Table 10.1-1 Fugitive Emission Factors for Oil and Gas Facilities Using the CLP Method

Component Type (Gas Service)	Production Field	
	THC EF (lb/day leak path)	ROC/THC Ratio
Valve	0.295	0.31
Connection	0.070	0.31
Compressor Seal	2.143	0.31
Pump Seal	1.123	0.31
Pressure Relief	6.670	0.31

Reference D - Solvents

- All solvents not used to thin surface coatings are included in this equipment category.
- Exempt solvent emissions (per Rule 202.U.3) are assumed to be based on 55 gallons of solvent use (maximum expected) at the facility with 6.6 lb. of ROC per gallon of solvent.
- Emissions from exempt solvent use, per Rule 202.N shall not exceed 10 tons per year

10.2 *Equipment Calculation Spreadsheets*

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Table 10.2-1 Uncontrolled Internal Combustion Engines Permitted at the Greka Cat Canyon Stationary Source

Equipment Category	Serial #	APCD ID#	Location	Device Specifications				Operating Limitations			References
				Max RPM	BSFC (Btu/bhp-hr)	Capacity (bhp)	Capacity Limits	Hours Online (hr/yr)	Hour (MMBtu/hr)	Annual (MMBtu/yr)	
Waukesha (145)	1077	1077	Bell #132	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	A
M & M (800)	7852	7852	Bell #120	1,000	10,000	48.0	Orifice Plate @ 0.85"	8,760	0.48	4,205	
M & M (605)	8063	8063	Bell #77 - NO	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
M & M (605)	8067	8067	Bell #52	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
M & M (605)	8481	8481	Bell #53	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
M & M (605)	8495	8495	Bell #57 - NO	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
M & M (283)	8570	8570	Bell #170	1,100	11,000	25.0	Nameplate	8,760	0.28	2,409	
M & M (605)	8932	8932	Bell #111 - NO	1,000	11,000	46.0	Nameplate	8,760	0.51	4,433	
Waukesha (145)	9563	9563	Bell #169	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (145)	9573	9573	Blockman #315-H	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
M & M (605)	9628	9628	Bell #79	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
M & M (605)	9808	9808	Bell #77 - NO	1,100	11,000	46.0	Orifice Plate @ 0.98"	8,760	0.51	4,433	
M & M (605)	9837	9837	Bell #166	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
Waukesha (145)	9995	9995	Blockman Injection #10	1,000	10,000	49.5	Orifice Plate @ 0.92"	8,760	0.50	4,336	
M & M (605)	10353	10353	Bell #77 - NO	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
Waukesha (145)	10388	10388	Blockman Injection #13	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (145)	10411	10411	Bell #321	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (145)	10771	10771	Bell #97	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
M & M (605)	10890	10890	Bell #41	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
M & M (425)	10957	10957	Bell #57 - NO	1,100	10,500	39.0	Nameplate	8,760	0.41	3,587	
Waukesha (145)	10983	10983	Bell #57 - NO	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (145)	11188	11188	Bell #77 - NO	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (145)	11492	11492	Bell #77 - NO	1,000	10,000	49.5	Orifice Plate @ 0.98"	8,760	0.50	4,336	
Waukesha (145)	11493	11493	Blockman Injection #3	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (145)	11508	11508	Bell #77 - NO	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (145)	11509	11509	Blockman Charge Pump	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (145)	11516	11516	Blockman Injection #4	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (145)	11517	11517	Bell #135	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (145)	11525	11525	Bell #89	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (145)	11526	11526	Blockman Injection #6	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (145)	11544	11544	Bell #57 - NO	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (145)	11545	11545	Palmer Stendl #12-H	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,761	0.50	4,337	
Waukesha (817)	11696	11696	Blockman Injection #7	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	

Table 10.2-1 Continued

Equipment Category	Serial #	APCD ID#	Location	Device Specifications				Operating Limitations			References
				Max RPM	BSFC (Btu/bhp-hr)	Capacity (bhp)	Capacity Limits	Hours Online (hr/yr)	Hour (MMBtu/hr)	Annual (MMBtu/yr)	
Waukesha (140)	11706	6454	Bell #28	1,000	10,000	49.5	Orifice Plate @ 0.98"	8,760	0.50	4,336	A
Waukesha (145)	11711	3398	Bell #92	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (140)	11754	3413	Bell #77 - NO	1,500	9,100	49.5	Orifice Plate @ 0.98"	8,760	0.45	3,946	
Waukesha (195)	11796	3417	Bell #57 - NO	2,200	9,100	41.8	Orifice Plate @ 1.65"	8,760	0.38	3,332	
M & M (283)	11826	100349	Bell #58-H	1,100	11,000	25.0	Nameplate	8,760	0.28	2,409	
M & M (605)	11854	3452	Palmer Stendl #12	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
M & M (605)	11859	3433	Bell #111	1,000	11,000	46.0	Nameplate	8,760	0.51	4,433	
Waukesha (145)	11923	5319	Bell #87	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (195)	11949	6455	Bell #77 - NO	2,200	9,100	41.8	Orifice Plate @ 1.65"	8,760	0.38	3,332	
Waukesha (F1197)	12035	6456	Bell #42	800	9,100	49.5	Orifice Plate @ 0.98"	8,760	0.45	3,946	
M & M (605)	12069	3394	Bell #77 - NO	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
M & M (504)	12175	3435	Bell #75	1,600	10,000	48.9	Orifice Plate @ 0.935"	8,760	0.49	4,284	
Waukesha (145)	12191	6457	Bell #77 - NO	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (145)	110006	6458	Blockman Injection #9	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (140)	110008	6448	Blockman #320-H	1,000	10,000	49.5	Orifice Plate @ 0.98"	8,760	0.50	4,336	
Waukesha (145)	110009	3390	Blockman Injection #14	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (140)	110011	3412	Blockman #21-H	1,000	10,000	49.5	Orifice Plate @ 0.98"	8,760	0.50	4,336	
Waukesha (140)	110015	3441	Bell #33	1,000	10,000	49.5	Orifice Plate @ 0.98"	8,760	0.50	4,336	
Waukesha (140)	110016	6462	Blockman #305-H	1,000	10,000	49.5	Orifice Plate @ 0.98"	8,760	0.50	4,336	
M & M (605)	110030	8863	Dominion #35	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
M & M (605)	110031	8864	Dominion #48	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
M & M (605)	110032	9101	Dominion #57	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
M & M (605)	110033	9171	Bell #161	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
M & M (425)	110034	9103	UCB Well	1,100	10,500	39.0	Nameplate	8,760	0.41	3,587	
M & M (425)	110035	9104	UCB Well	1,100	10,500	39.0	Nameplate	8,760	0.41	3,587	
M&M (605)	110036	8861	UCB #1	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
M&M (605)	110037	3405	Bell #164	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
M & M (403)	164582	3456	Blockman #4	1,100	11,000	32.0	Nameplate	8,760	0.35	3,084	
M & M (605)	11113N	3378	Bell #171	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
Waukesha (145)	11509S	9100	Blockman Charge Pump	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
M & M (605)	9857S	6450	Bell #51	1,100	11,000	46.0	Orifice Plate @ 0.98"	8,760	0.51	4,433	

Table 10.2-2 Fugitive Hydrocarbon Emission Calculations – CLP Method

ADMINISTRATIVE INFORMATION	
Attachment:	10.2
Company:	Greka
Facility:	ICE Facility
Processed by:	JJM
Date:	12/7/2009
\\sbcapcd.org\shares\Groups\ENGR\WP\Oil&Gas\Greka\Cat_Canyon\Permits\P70-Renew al-2006\IC Engines\ICE FHC Calcs - CLP Method.x	

Facility Type: (Choose one)

Production Field	x
Gas Processing Plant	
Refinery	
Offshore Platform	

Component	Count ⁽¹⁾	ROC ⁽²⁾ Emission Factor (lbs/day-clp)	ROC/THC Ratio	Uncontrolled ROC Emission (lbs/day)	ROC Control Eff	Controlled ROC Emission (lbs/hr)	Controlled ROC Emission (lbs/day)	Controlled ROC Emission (Tons/Qtr)	Controlled ROC Emission (Tons/year)
Gas Condensate Service									
Valves - Acc/Inacc	7	0.295	0.31	0.64	0.80	0.005	0.128	0.006	0.023
Valves - Bellows		0.295	0.31	0.00	1.00	0.000	0.000	0.000	0.000
Valves - Unsafe		0.295	0.31	0.00	0.00	0.000	0.000	0.000	0.000
Valves - Low Emitting		0.295	0.31	0.00	0.00	0.000	0.000	0.000	0.000
Valves - E-500		0.295	0.31	0.00	0.85	0.000	0.000	0.000	0.000
Valves - E-100		0.295	0.31	0.00	0.90	0.000	0.000	0.000	0.000
Flanges - Acc/Inacc	188	0.070	0.31	4.08	0.80	0.034	0.816	0.037	0.149
Flanges - Unsafe		0.070	0.31	0.00	0.00	0.000	0.000	0.000	0.000
Flanges - E-500		0.070	0.31	0.00	0.85	0.000	0.000	0.000	0.000
Flanges - E-100		0.070	0.31	0.00	0.90	0.000	0.000	0.000	0.000
Compressor Seals - To Atm	4	2.143	0.31	2.66	0.80	0.022	0.531	0.024	0.097
Compressor Seals - To VRS		2.143	0.31	0.00	1.00	0.000	0.000	0.000	0.000
Compressor Seals - E-500		2.143	0.31	0.00	0.85	0.000	0.000	0.000	0.000
Compressor seals - E-100		2.143	0.31	0.00	0.90	0.000	0.000	0.000	0.000
PSV - To Atm	4	6.670	0.31	8.27	0.80	0.069	1.654	0.075	0.302
PSV - To VRS		6.670	0.31	0.00	1.00	0.000	0.000	0.000	0.000
PSV - E-500		6.670	0.31	0.00	0.85	0.000	0.000	0.000	0.000
PSV - E-100		6.670	0.31	0.00	0.90	0.000	0.000	0.000	0.000
Pump Seals		1.123	0.31	0.00	0.80	0.000	0.000	0.000	0.000
Pump Seals - E-500		1.123	0.31	0.00	0.85	0.000	0.000	0.000	0.000
Pump Seals - E-100		1.123	0.31	0.00	0.90	0.000	0.000	0.000	0.000
Gas Service Total	203			15.65		0.130	3.130	0.143	0.571

10.3 *Fee Calculations*

Permit fees for the ICE facility are based on equipment rating, pursuant to APCD Rule 210.I.B.2 and Schedule A. See Attachment 10.5 for a list of fee-permitted equipment at this facility.

NOTE: However, all work performed with respect to implementing the requirements of the Part 70 Operating Permit program, including federal permit processing and federal permit compliance monitoring are assessed on a cost reimbursement basis pursuant to APCD Rule 210.I.C.

FEE STATEMENT

PT-70/Reeval No. 08036 - R8

FID: 03831 Cat Canyon IC Engines / SSID: 02658



Device No.	Device Name	Fee Schedule	Qty of Fee Units	Fee per Unit	Fee Units	Max or Min. Fee Apply?	Number of Same Devices	Pro Rate Factor	Device Fee	Penalty Fee?	Fee Credit	Total Fee per Device
006466	Controlled IC Engine	A3	1.830	440.07	Per 1 million Btu input	No	1	1.000	805.33	0.00	0.00	805.33
003363	Compressor	A3	4.000	440.07	Per 1 million Btu input	No	1	1.000	1,760.28	0.00	0.00	1,760.28
006467	Controlled IC Engine: Waukesha	A3	1.780	440.07	Per 1 million Btu input	No	1	1.000	783.32	0.00	0.00	783.32
003364	Compressor	A3	4.000	440.07	Per 1 million Btu input	No	1	1.000	1,760.28	0.00	0.00	1,760.28
003389	Uncontrolled IC Engine	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
003434	Uncontrolled IC Engine:	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
003450	Uncontrolled IC Engine:	A3	0.480	440.07	Per 1 million Btu input	No	1	1.000	211.23	0.00	0.00	211.23
003407	Uncontrolled IC Engine:	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
003439	Uncontrolled IC Engine: 8481	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
003453	Uncontrolled IC Engine: 8570	A3	0.280	440.07	Per 1 million Btu input	No	1	1.000	123.22	0.00	0.00	123.22
005320	Uncontrolled IC Engine:	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
009170	Uncontrolled IC Engine:	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
006449	Uncontrolled IC Engine:	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
003443	Uncontrolled IC Engine: #9628	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
008862	Uncontrolled IC Engine: #9837	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
006451	Uncontrolled IC Engine: #9995	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04

003430	Uncontrolled IC Engine: #10353	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
003384	Uncontrolled IC Engine: #10771	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
003392	Uncontrolled IC Engine: #10411	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
003426	Uncontrolled IC Engine: #10890	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
003388	Uncontrolled IC Engine: #10983	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
006446	Uncontrolled IC Engine: #10957	A3	0.410	440.07	Per 1 million Btu input	No	1	1.000	180.43	0.00	0.00	180.43
005312	Uncontrolled IC Engine: #11492	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
005314	Uncontrolled IC Engine: #11188	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
005315	Uncontrolled IC Engine: #11493	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
003380	Uncontrolled IC Engine: #11516	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
005316	Uncontrolled IC Engine: #11508	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
003386	Uncontrolled IC Engine: #11509	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
003381	Uncontrolled IC Engine: #11526	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
003401	Uncontrolled IC Engine: #11544	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
003382	Uncontrolled IC Engine: #11696	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
006453	Uncontrolled IC Engine: #11545	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
003398	Uncontrolled IC Engine: #11711	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
006454	Uncontrolled IC Engine: #11706	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
003413	Uncontrolled IC Engine: #11754	A3	0.450	440.07	Per 1 million Btu input	No	1	1.000	198.03	0.00	0.00	198.03
003417	Uncontrolled IC Engine: #11796	A3	0.380	440.07	Per 1 million Btu input	No	1	1.000	167.23	0.00	0.00	167.23
003433	Uncontrolled IC Engine: #11859	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
100349	Uncontrolled IC Engine: #11826	A3	0.280	440.07	Per 1 million Btu input	No	1	1.000	123.22	0.00	0.00	123.22

003452	Uncontrolled IC Engine: #11854	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
005319	Uncontrolled IC Engine: #11923	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
006455	Uncontrolled IC Engine: #11949	A3	0.380	440.07	Per 1 million Btu input	No	1	1.000	167.23	0.00	0.00	167.23
003394	Uncontrolled IC Engine: #12069	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
006456	Uncontrolled IC Engine: #12035	A3	0.450	440.07	Per 1 million Btu input	No	1	1.000	198.03	0.00	0.00	198.03
003435	Uncontrolled IC Engine: #12175	A3	0.490	440.07	Per 1 million Btu input	No	1	1.000	215.63	0.00	0.00	215.63
006458	Uncontrolled IC Engine: #110006	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
006448	Uncontrolled IC Engine: #110008	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
003390	Uncontrolled IC Engine: #110009	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
003412	Uncontrolled IC Engine: #110011	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
003441	Uncontrolled IC Engine: #110015	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
008864	Uncontrolled IC Engine: #110031	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
009101	Uncontrolled IC Engine: #110032	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
009103	Uncontrolled IC Engine: #110034	A3	0.410	440.07	Per 1 million Btu input	No	1	1.000	180.43	0.00	0.00	180.43
009104	Uncontrolled IC Engine: #110035	A3	0.410	440.07	Per 1 million Btu input	No	1	1.000	180.43	0.00	0.00	180.43
008861	Uncontrolled IC Engine: #110036	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44

003405	Uncontrolled IC Engine: #110037	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
003378	Uncontrolled IC Engine: #11113N	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
009100	Uncontrolled IC Engine: #11509S	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
	Device Fee Sub-Totals =								\$16,366.20	\$0.00	\$0.00	
	Device Fee Total =											\$16,366.20

Permit Fee

Fee Based on Devices

16,366.20

Fee Statement Grand Total = \$16,366

Notes:

-
- (1) Fee Schedule Items are listed in APCD Rule 210, Fee Schedule "A".
 - (2) The term "Units" refers to the unit of measure defined in the Fee Schedule.

10.4 IDS Database Emission Tables

Table 10.4-1 Permitted Potential to Emit (PPTE)

Facility	Units	NO _x	ROC	CO	SO _x	PM	PM ₁₀
ICEs	lbs/day	1,166.08	70.58	1,004.02	76.09	6.49	6.49
	TPY	212.81	12.88	178.91	13.89	2.19	2.19

Table 10.4-2. Greka South Cat Canyon Stationary Source PTE

Facility	FID	Units	NO _x	ROC	CO	SO _x	PM	PM ₁₀
Bell Lease	3211	lbs/day	19.04	232.44	16.03	28.66	1.60	1.60
		TPY	3.47	42.21	2.93	5.23	0.29	0.29
Blockman Lease	3306	lbs/day	0.00	42.99	0.00	0.00	0.00	0.00
		TPY	0.00	7.85	0.00	0.00	0.00	0.00
Dominion Lease	4127	lbs/day	7.74	76.73	5.00	10.72	0.71	0.71
		TPY	1.41	8.16	0.91	1.96	0.13	0.13
ICE Facility	3831	lbs/day	1,166.08	70.58	1,004.02	76.09	6.49	6.49
		TPY	212.81	12.88	178.91	13.89	2.19	2.19
Palmer Stendl Lease	3307	lbs/day	0.00	17.53	0.00	0.00	0.00	0.00
		TPY	0.00	3.20	0.00	0.00	0.00	0.00
UCB Lease	4126	lbs/day	8.70	26.52	7.32	12.09	0.67	0.67
		TPY	1.59	4.04	1.34	2.21	0.12	0.12
TOTALS		lbs/day	1,201.56	466.79	1,032.37	127.56	9.47	9.47
		TPY	219.28	78.34	184.09	23.29	2.73	2.73

Table 10.4-2 Stationary Source Net Emission Increase Since 1990 (FNEI-90)

Facility	FID	Permits	Units	NOx	ROC	CO	SOx	PM	PM10
Bell Lease	3211	ATC 9146, 9412, and 9387	lbs/hr	0.00	1.44	4.58	0.00	0.00	0.00
			lbs/day	0.00	23.15	109.92	0.00	0.00	0.00
			TPQ	0.00	0.76	4.69	0.00	0.00	0.00
			TPY	0.00	4.22	18.75	0.00	0.00	0.00
Blockman	3306	ATC 9964	lbs/hr	0.00	0.03	0.00	0.00	0.00	0.00
			lbs/day	0.00	0.60	0.00	0.00	0.00	0.00
			TPQ	0.00	0.03	0.00	0.00	0.00	0.00
			TPY	0.00	0.11	0.00	0.00	0.00	0.00
Dominion Lease	4127	ATC 9734 and 9884	lbs/hr	0.25	0.37	0.05	0.34	0.03	0.03
			lbs/day	6.00	8.93	1.30	8.17	0.69	0.69
			TPQ	0.28	0.66	0.06	0.37	0.03	0.03
			TPY	1.10	2.64	0.23	1.49	0.13	0.13
ICE Facility	3831	ATC 9610, 9975, 10133, and 10421	lbs/hr	0.00	0.00	0.00	0.00	0.05	0.05
			lbs/day	0.00	0.00	0.00	0.00	0.95	0.95
			TPQ	0.00	0.00	0.00	0.00	0.05	0.05
			TPY	0.00	0.00	0.00	0.00	0.18	0.18
Palmer Stendel	3307	ATC 9665	lbs/hr	0.00	0.02	0.00	0.00	0.00	0.00
			lbs/day	0.00	0.48	0.00	0.00	0.00	0.00
			TPQ	0.00	0.03	0.00	0.00	0.00	0.00
			TPY	0.00	0.10	0.00	0.00	0.00	0.00
UCB Lease	4126	ATC 10174	lbs/hr	0.00	0.12	0.00	0.00	0.00	0.00
			lbs/day	0.00	2.83	0.00	0.00	0.00	0.00
			TPQ	0.00	0.04	0.00	0.00	0.00	0.00
			TPY	0.00	0.14	0.00	0.00	0.00	0.00
	Source NEI		lbs/hr	0.25	1.97	4.63	0.34	0.08	0.08
			lbs/day	6.00	35.99	111.22	8.17	1.64	1.64
			TPQ	0.28	1.51	4.75	0.37	0.08	0.08
			TPY	1.10	7.21	18.98	1.49	0.31	0.31

10.5 *Equipment List*

Monday, December 07, 2009
Santa Barbara County APCD – Equipment List

PT-70/Reeval 08036 R8 / FID: 03831 Cat Canyon IC Engines / SSID: 02658

A PERMITTED EQUIPMENT

1 Controlled IC Engine

<i>Device ID #</i>	006466	<i>Device Name</i>	Controlled IC Engine
<i>Rated Heat Input</i>	1.830 MMBtu/Hour	<i>Physical Size</i>	225.00 Brake Horsepower
<i>Manufacturer</i>	Caterpillar	<i>Operator ID</i>	
<i>Model</i>	G-342	<i>Serial Number</i>	12253
<i>Location Note</i>			
<i>Device</i>	Controlled IC Engine:NSCR		
<i>Description</i>			

2 Fugitive Hydrocarbons - Gas Condensate Service - CLP

2.1 Valves - Acc/Inacc

<i>Device ID #</i>	100352	<i>Device Name</i>	Valves - Acc/Inacc
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

2.2 Flanges - Acc/Inacc

<i>Device ID #</i>	100353	<i>Device Name</i>	Flanges - Acc/Inacc
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

2.3 PSV - To Atm

<i>Device ID #</i>	100355	<i>Device Name</i>	PSV - To Atm
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

2.4 Compressor Seals - To Atm

<i>Device ID #</i>	100354	<i>Device Name</i>	Compressor Seals - To Atm
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

3 Compressor

<i>Device ID #</i>	003363	<i>Device Name</i>	Compressor
<i>Rated Heat Input</i>		<i>Physical Size</i>	400.00 Brake Horsepower
<i>Manufacturer</i>	Clark	<i>Operator ID</i>	3831-005
<i>Model</i>	RA-4	<i>Serial Number</i>	19718
<i>Location Note</i>			
<i>Device</i>	Rated at 400 bhp at 300 RPM (limited by nameplate);		
<i>Description</i>			

4 Controlled IC Engine: Waukesha

<i>Device ID #</i>	006467	<i>Device Name</i>	Controlled IC Engine: Waukesha
<i>Rated Heat Input</i>	1.780 MMBtu/Hour	<i>Physical Size</i>	190.00 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	Injection #2
<i>Model</i>	F1197	<i>Serial Number</i>	110007
<i>Location Note</i>			
<i>Device</i>	Controlled IC Engine: NSCR		
<i>Description</i>			

5 Compressor

<i>Device ID #</i>	003364	<i>Device Name</i>	Compressor
<i>Rated Heat Input</i>		<i>Physical Size</i>	400.00 Brake Horsepower
<i>Manufacturer</i>	Clark	<i>Operator ID</i>	3831-006
<i>Model</i>	RA-4	<i>Serial Number</i>	19687
<i>Location Note</i>			
<i>Device</i>	Rated at 400 bhp at 300 RPM (limited by nameplate)		
<i>Description</i>			

6 Uncontrolled IC Engine

<i>Device ID #</i>	003389	<i>Device Name</i>	Uncontrolled IC Engine
<i>Rated Heat Input</i>	0.500 MMBtu/Hour	<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	1077
<i>Location Note</i>	Bell #132		
<i>Device</i>	Uncontrolled engine, rated bhp @ 1,000 RPM; capacity limits: Orifice		
<i>Description</i>	Plate @ 0.922"		

7 Uncontrolled IC Engine:

<i>Device ID #</i>	003434	<i>Device Name</i>	Uncontrolled IC Engine:
<i>Rated Heat Input</i>	0.510 MMBtu/Hour	<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 605	<i>Operator ID Serial Number</i>	8063
<i>Location Note</i>	Bell #77 - NO		
<i>Device Description</i>	Uncontrolled ICE, rated bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC:		

8 Uncontrolled IC Engine:

<i>Device ID #</i>	003450	<i>Device Name</i>	Uncontrolled IC Engine:
<i>Rated Heat Input</i>	0.800 MMBtu/Hour	<i>Physical Size</i>	48.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 800	<i>Operator ID Serial Number</i>	7852
<i>Location Note</i>	Bell #120		
<i>Device Description</i>	Uncontrolled ICE, rated bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.85"		

9 Uncontrolled IC Engine:

<i>Device ID #</i>	003407	<i>Device Name</i>	Uncontrolled IC Engine:
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 605	<i>Operator ID Serial Number</i>	8495
<i>Location Note</i>	Bell #57 - NO		
<i>Device Description</i>	Uncontrolled ICE, maximum heat input rating: 0.51 MMBtu/hr, rated bhp @ 1,100 RPM; on line: 8,760 hr/yr		

10 Uncontrolled IC Engine: 8481

Device ID #	003439	Device Name	Uncontrolled IC Engine: 8481
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M,	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	8481
<i>Location Note</i>	Bell #53		
<i>Device Description</i>	Uncontrolled ICE, input rating: 0.51 MMBtu/hr, rated bhp @ 1,100 RPM; on line: 8,760 hr/yr		

11 Uncontrolled IC Engine: 8570

Device ID #	003453	Device Name	Uncontrolled IC Engine: 8570
<i>Rated Heat Input</i>	0.280 MMBtu/Hour	<i>Physical Size</i>	25.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	283	<i>Serial Number</i>	8570
<i>Location Note</i>	Bell #170		
<i>Device Description</i>	Uncontrolled ICE, maximum heat input rating: 0.28 MMBtu/hr, rated bhp @ 1,100 RPM; on line: 8,760 hr/yr		

12 Uncontrolled IC Engine:

Device ID #	005320	Device Name	Uncontrolled IC Engine:
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	9563
<i>Location Note</i>	Bell #169		
<i>Device Description</i>	Uncontrolled ICE, maximum heat input rating: 0.50 MMBtu/hr, rated bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; on line: 8,760 hr/yr		

13 Uncontrolled IC Engine:

Device ID #	009170	Device Name	Uncontrolled IC
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			Engine:
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	8932
<i>Location Note</i>	Bell #111 - NO		
<i>Device Description</i>	Uncontrolled ICE, maximum heat input rating: 0.51 MMBtu/hr, rated bhp @ 1,100 RPM; capacity limits: Nameplate; on line: 8,760 hr/yr		

14 Uncontrolled IC Engine:

<i>Device ID #</i>	006449	<i>Device Name</i>	Uncontrolled IC Engine:
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	9573
<i>Location Note</i>	Blockman #315-H		
<i>Device Description</i>	Uncontrolled ICE, maximum heat input rating: 0.50 MMBtu/hr, rated bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; on line: 8,760 hr/yr		

15 Uncontrolled IC Engine: #9628

<i>Device ID #</i>	003443	<i>Device Name</i>	Uncontrolled IC Engine: #9628
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	9628
<i>Location Note</i>	Bell #79		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

16 Uncontrolled IC Engine: #9837

<i>Device ID #</i>	008862	<i>Device Name</i>	Uncontrolled IC Engine: #9837
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	9837
<i>Location Note</i>	Bell #166		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

17 Uncontrolled IC Engine: #9995

<i>Device ID #</i>	006451	<i>Device Name</i>	Uncontrolled IC Engine: #9995
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	9995
<i>Location Note</i>	Blockman Injection #10		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.92"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

18 Uncontrolled IC Engine: #10353

<i>Device ID #</i>	003430	<i>Device Name</i>	Uncontrolled IC Engine: #10353
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	10353
<i>Location Note</i>	Bell #77 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

19 Uncontrolled IC Engine: #10771

<i>Device ID #</i>	003384	<i>Device Name</i>	Uncontrolled IC Engine: #10771
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	10771
<i>Location Note</i>	Bell #97		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: , maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

20 Uncontrolled IC Engine: #10411

<i>Device ID #</i>	003392	<i>Device Name</i>	Uncontrolled IC Engine: #10411
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	10411
<i>Location Note</i>	Bell #321		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

21 Uncontrolled IC Engine: #10890

<i>Device ID #</i>	003426	<i>Device Name</i>	Uncontrolled IC Engine: #10890
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	10890
<i>Location Note</i>	Bell #41		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

22 Uncontrolled IC Engine: #10983

<i>Device ID #</i>	003388	<i>Device Name</i>	Uncontrolled IC Engine: #10983
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	10983
<i>Location Note</i>	Bell #57 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

23 Uncontrolled IC Engine: #10957

<i>Device ID #</i>	006446	<i>Device Name</i>	Uncontrolled IC Engine: #10957
<i>Rated Heat Input</i>		<i>Physical Size</i>	39.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	425	<i>Serial Number</i>	10957
<i>Location Note</i>	Bell #57 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 425, maximum heat input rating: 0.41 MMBtu/hr, horsepower: 39.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 10,500 BTU/bhp-hr; on line: 8,760 hr/yr		

24 Uncontrolled IC Engine: #11492

<i>Device ID #</i>	005312	<i>Device Name</i>	Uncontrolled IC Engine: #11492
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	11492
<i>Location Note</i>	Bell #77 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

25 Uncontrolled IC Engine: #11188

<i>Device ID #</i>	005314	<i>Device Name</i>	Uncontrolled IC Engine: #11188
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	11188
<i>Location Note</i>	Bell #77 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

26 Uncontrolled IC Engine: #11493

<i>Device ID #</i>	005315	<i>Device Name</i>	Uncontrolled IC Engine: #11493
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	11493
<i>Location Note</i>	Blockman Injection #3		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

27 Uncontrolled IC Engine: #11516

<i>Device ID #</i>	003380	<i>Device Name</i>	Uncontrolled IC Engine: #11516
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	11516
<i>Location Note</i>	Blockman Injection #4		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

28 Uncontrolled IC Engine: #11508

<i>Device ID #</i>	005316	<i>Device Name</i>	Uncontrolled IC Engine: #11508
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	11508
<i>Location Note</i>	Bell #77 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

29 Uncontrolled IC Engine: #11509

<i>Device ID #</i>	003386	<i>Device Name</i>	Uncontrolled IC Engine: #11509
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	11509
<i>Location Note</i>	Blockman Charge Pump		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

30 Uncontrolled IC Engine: #11526

<i>Device ID #</i>	003381	<i>Device Name</i>	Uncontrolled IC Engine: #11526
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	11526
<i>Location Note</i>	Blockman Injection #6		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

31 Uncontrolled IC Engine: #11544

<i>Device ID #</i>	003401	<i>Device Name</i>	Uncontrolled IC Engine: #11544
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	11544
<i>Location Note</i>	Bell #57 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

32 Uncontrolled IC Engine: #11696

<i>Device ID #</i>	003382	<i>Device Name</i>	Uncontrolled IC Engine: #11696
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 817	<i>Operator ID Serial Number</i>	11696
<i>Location Note</i>	Blockman Injection #7		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 817, maximum heat input rating: MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

33 Uncontrolled IC Engine: #11545

<i>Device ID #</i>	006453	<i>Device Name</i>	Uncontrolled IC Engine: #11545
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	11545

<i>Location Note</i>	Palmer Stendl #12-H
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr

34 Uncontrolled IC Engine: #11711

<i>Device ID #</i>	003398	<i>Device Name</i>	Uncontrolled IC Engine: #11711
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	11711
<i>Location Note</i>	Bell #92		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

35 Uncontrolled IC Engine: #11706

<i>Device ID #</i>	006454	<i>Device Name</i>	Uncontrolled IC Engine: #11706
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	140	<i>Serial Number</i>	11706
<i>Location Note</i>	Bell #28		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 140, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

36 Uncontrolled IC Engine: #11754

<i>Device ID #</i>	003413	<i>Device Name</i>	Uncontrolled IC Engine: #11754
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	140	<i>Serial Number</i>	11754
<i>Location Note</i>	Bell #77 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 140, maximum heat input rating: 0.45 MMBtu/hr, horsepower: 49.5 bhp @ 1,500 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: 9100 BTU/bhp-hr; on line: 8,760 hr/yr		

37 Uncontrolled IC Engine: #11796

<i>Device ID #</i>	003417	<i>Device Name</i>	Uncontrolled IC Engine: #11796
<i>Rated Heat Input</i>		<i>Physical Size</i>	41.80 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	195	<i>Serial Number</i>	11796
<i>Location Note</i>	Bell #57 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 195, maximum heat input rating: 0.38 MMBtu/hr, horsepower: 41.8 bhp @ 2,200 RPM; capacity limits: Orifice Plate @ 1.65"; BSFC: 9100 BTU/bhp-hr; on line: 8,760 hr/yr		

38 Uncontrolled IC Engine: #11859

<i>Device ID #</i>	003433	<i>Device Name</i>	Uncontrolled IC Engine: #11859
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	11859
<i>Location Note</i>	Bell #111		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

39 Uncontrolled IC Engine: #11826

<i>Device ID #</i>	100349	<i>Device Name</i>	Uncontrolled IC Engine: #11826
<i>Rated Heat Input</i>		<i>Physical Size</i>	25.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	283	<i>Serial Number</i>	11826
<i>Location Note</i>	Bell #58-H		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: , maximum heat input rating: 0.28 MMBtu/hr, horsepower: 25.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

40 Uncontrolled IC Engine: #11854

<i>Device ID #</i>	003452	<i>Device Name</i>	Uncontrolled IC Engine: #11854
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	11854
<i>Location Note</i>	Palmer Stendl #12		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

41 Uncontrolled IC Engine: #11923

<i>Device ID #</i>	005319	<i>Device Name</i>	Uncontrolled IC Engine: #11923
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	11923
<i>Location Note</i>	Bell #87		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

42 Uncontrolled IC Engine: #11949

<i>Device ID #</i>	006455	<i>Device Name</i>	Uncontrolled IC Engine: #11949
<i>Rated Heat Input</i>		<i>Physical Size</i>	41.80 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	195	<i>Serial Number</i>	11949
<i>Location Note</i>	Bell #77 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 195, maximum heat input rating: 0.38 MMBtu/hr, horsepower: 41.8 bhp @ 2,200 RPM; capacity limits: Orifice Plate @ 1.65"; BSFC: 9100 BTU/bhp-hr; on line: 8,760 hr/yr		

43 Uncontrolled IC Engine: #12069

<i>Device ID #</i>	003394	<i>Device Name</i>	Uncontrolled IC Engine: #12069
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	12069
<i>Location Note</i>	Bell #77 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

44 Uncontrolled IC Engine: #12035

<i>Device ID #</i>	006456	<i>Device Name</i>	Uncontrolled IC Engine: #12035
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	F1197	<i>Serial Number</i>	12035
<i>Location Note</i>	Bell #42		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: F1197, maximum heat input rating: 0.45 MMBtu/hr, horsepower: 49.5 bhp @ 800 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: BTU/bhp-hr; on line: 8,760 hr/yr		

45 Uncontrolled IC Engine: #12175

<i>Device ID #</i>	003435	<i>Device Name</i>	Uncontrolled IC Engine: #12175
<i>Rated Heat Input</i>		<i>Physical Size</i>	48.90 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	504	<i>Serial Number</i>	12175
<i>Location Note</i>	Bell #75		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 504, maximum heat input rating: 0.49 MMBtu/hr, horsepower: 48.9 bhp @ 1600 RPM; capacity limits: Orifice Plate @ 0.935"; BSFC: 10,000 BTU/bhp-hr; on line: 8,760 hr/yr		

46 Uncontrolled IC Engine: #110006

<i>Device ID #</i>	006458	<i>Device Name</i>	Uncontrolled IC Engine: #110006
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	110006
<i>Location Note</i>	Blockman Injection #9		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

47 Uncontrolled IC Engine: #110008

<i>Device ID #</i>	006448	<i>Device Name</i>	Uncontrolled IC Engine: #110008
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	140	<i>Serial Number</i>	110008
<i>Location Note</i>	Blockman #320-H		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: , maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

48 Uncontrolled IC Engine: #110009

<i>Device ID #</i>	003390	<i>Device Name</i>	Uncontrolled IC Engine: #110009
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	110009
<i>Location Note</i>	Blockman Injection #14		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

49 Uncontrolled IC Engine: #110011

<i>Device ID #</i>	003412	<i>Device Name</i>	Uncontrolled IC Engine: #110011
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	140	<i>Serial Number</i>	110011
<i>Location Note</i>	Blockman #21-H		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 140 , maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

50 Uncontrolled IC Engine: #110015

<i>Device ID #</i>	003441	<i>Device Name</i>	Uncontrolled IC Engine: #110015
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	140	<i>Serial Number</i>	110015
<i>Location Note</i>	Bell #33		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 140 , maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

51 Uncontrolled IC Engine: #110031

<i>Device ID #</i>	008864	<i>Device Name</i>	Uncontrolled IC Engine: #110031
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	110031
<i>Location Note</i>	Dominion #48		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

52 Uncontrolled IC Engine: #110032

<i>Device ID #</i>	009101	<i>Device Name</i>	Uncontrolled IC Engine: #110032
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	110032
<i>Location Note</i>	Dominion #57		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

53 Uncontrolled IC Engine: #110034

<i>Device ID #</i>	009103	<i>Device Name</i>	Uncontrolled IC Engine: #110034
<i>Rated Heat Input</i>		<i>Physical Size</i>	39.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	425	<i>Serial Number</i>	110034
<i>Location Note</i>	UCB Well		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 425, maximum heat input rating: 0.41 MMBtu/hr, horsepower: 39.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 10,500 BTU/bhp-hr; on line: 8,760 hr/yr		

54 Uncontrolled IC Engine: #110035

<i>Device ID #</i>	009104	<i>Device Name</i>	Uncontrolled IC Engine: #110035
<i>Rated Heat Input</i>		<i>Physical Size</i>	39.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	425	<i>Serial Number</i>	110035
<i>Location Note</i>	UCB Well		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 425, maximum heat input rating: MMBtu/hr, horsepower: 39.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 10,500 BTU/bhp-hr; on line: 8,760 hr/yr		

55 Uncontrolled IC Engine: #110036

<i>Device ID #</i>	008861	<i>Device Name</i>	Uncontrolled IC Engine: #110036
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	110036
<i>Location Note</i>	UCB #1		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

56 Uncontrolled IC Engine: #110037

<i>Device ID #</i>	003405	<i>Device Name</i>	Uncontrolled IC Engine: #110037
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	110037
<i>Location Note</i>	Bell #164		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

57 Uncontrolled IC Engine: #11113N

<i>Device ID #</i>	003378	<i>Device Name</i>	Uncontrolled IC Engine: #11113N
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	11113N
<i>Location Note</i>	Bell #171		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

58 Uncontrolled IC Engine: #11509S

<i>Device ID #</i>	009100	<i>Device Name</i>	Uncontrolled IC Engine: #11509S
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	11509S
<i>Location Note</i>	Blockman Charge Pump		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

E DE-PERMITTED EQUIPMENT**1 Uncontrolled IC Engine:**

<i>Device ID #</i>	003438	<i>Device Name</i>	Uncontrolled IC Engine:
<i>Rated Heat Input</i>	0.510 MMBtu/Hour	<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	8067
<i>Depermitted</i>		<i>Facility Transfer</i>	
<i>Device Description</i>	Uncontrolled ICE, rated bhp @ 1,100 RPM; capacity limits: Nameplate		

2 Uncontrolled IC Engine: #9808

<i>Device ID #</i>	003437	<i>Device Name</i>	Uncontrolled IC Engine: #9808
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	9808
<i>Depermitted</i>		<i>Facility Transfer</i>	
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

3 Uncontrolled IC Engine: #10388

<i>Device ID #</i>	003387	<i>Device Name</i>	Uncontrolled IC Engine: #10388
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	10388
<i>Depermitted</i>		<i>Facility Transfer</i>	
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

4 Uncontrolled IC Engine: #11517

<i>Device ID #</i>	009952	<i>Device Name</i>	Uncontrolled IC Engine: #11517
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	11517
<i>Depermitted</i>		<i>Facility Transfer</i>	
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

5 Uncontrolled IC Engine: #11525

<i>Device ID #</i>	003397	<i>Device Name</i>	Uncontrolled IC Engine: #11525
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	11525
<i>Depermitted</i>		<i>Facility Transfer</i>	
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

6 Uncontrolled IC Engine: #12191

<i>Device ID #</i>	006457	<i>Device Name</i>	Uncontrolled IC Engine: #12191
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	12191
<i>Depermitted</i>		<i>Facility Transfer</i>	
<i>Device</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145,		
<i>Description</i>	maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

7 Uncontrolled IC Engine: #110016

<i>Device ID #</i>	006462	<i>Device Name</i>	Uncontrolled IC Engine: #110016
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	140	<i>Serial Number</i>	110016
<i>Depermitted</i>		<i>Facility Transfer</i>	
<i>Device</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 140 ,		
<i>Description</i>	maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

8 Uncontrolled IC Engine: #110030

<i>Device ID #</i>	008863	<i>Device Name</i>	Uncontrolled IC Engine: #110030
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	110030
<i>Depermitted</i>		<i>Facility Transfer</i>	
<i>Device</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum		
<i>Description</i>	heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

9 Uncontrolled IC Engine: #110033

<i>Device ID #</i>	009171	<i>Device Name</i>	Uncontrolled IC Engine: #110033
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 605	<i>Operator ID</i>	
<i>Depermitted</i>		<i>Serial Number</i>	110033
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

10 Uncontrolled IC Engine: #164582

<i>Device ID #</i>	003456	<i>Device Name</i>	Uncontrolled IC Engine: #164582
<i>Rated Heat Input</i>		<i>Physical Size</i>	32.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 403	<i>Operator ID</i>	
<i>Depermitted</i>		<i>Serial Number</i>	164582
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 403, maximum heat input rating: 0.35 MMBtu/hr, horsepower: 32.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

11 Uncontrolled IC Engine: #9857S

<i>Device ID #</i>	006450	<i>Device Name</i>	Uncontrolled IC Engine: #9857S
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	9857S
<i>Depermitted Device</i>		<i>Facility Transfer</i>	
<i>Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

